

The Video Slot Examines the New Graphics Modes.

Amazing COMPUTING™

For The Commodore AMIGA®

Your Original AMIGA® Monthly Resource

Volume 8 No. 5 May 1993
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Media Madness!

In This Issue:

- Page Layout Design Tips
- Inside Directory Opus
- Learning C
- Amiga & Science
- One-Stop Music Shop

Reviews:

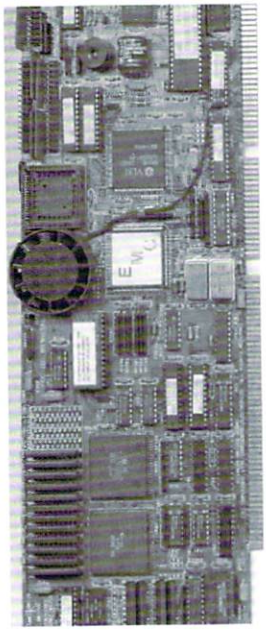
- T.A.B.S.
- SuperJam! 1.1
- Image-FX
- SimEarth
- Lords of Time
- Robin Hood

Also:

- Doin' It with CanDo: A quick and easy way to create applications!

05
0 74470 74710 9

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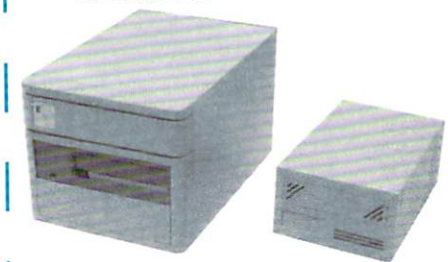
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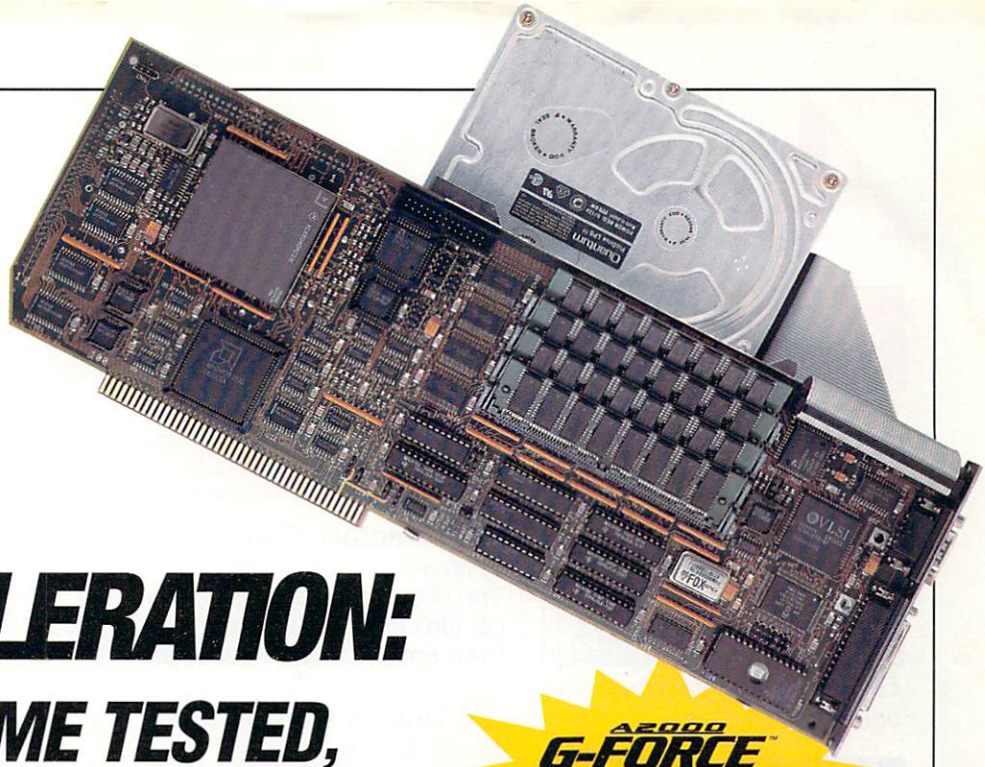
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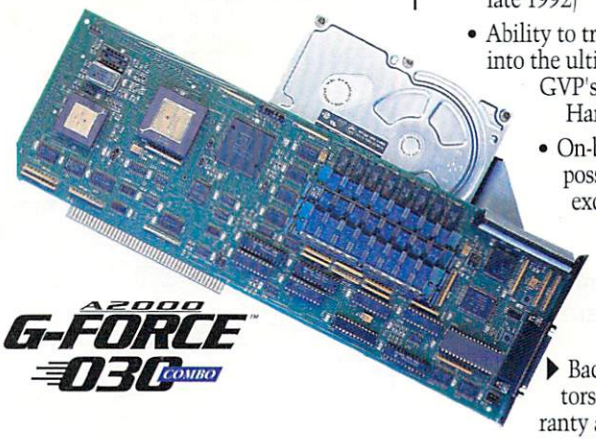
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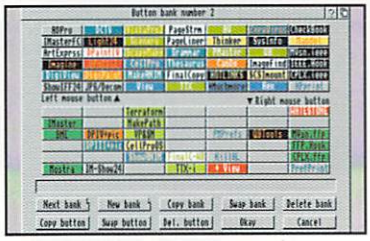
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Volume 8
Number 5
May 1993

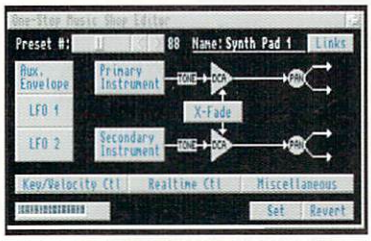
CONTENTS



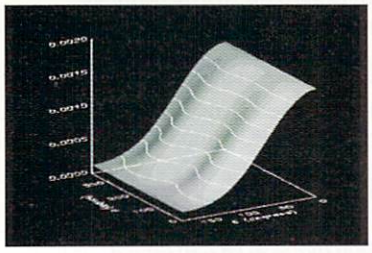
Directory Opus, the latest update, p. 24



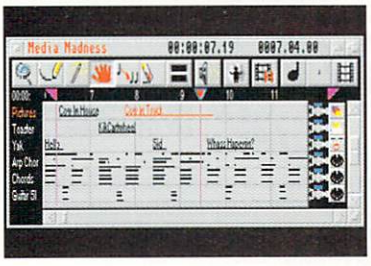
Create custom applications with CanDo, p. 37



One-Stop Music Shop p. 40



The Amiga meets the Scientific Community, p. 46



Create a *Media Madness* Tool, p. 48

In This Issue

24 Directory Opus
by Merrill Callaway
The ultimate directory utility that couldn't be improved upon is now even better, says the reviewer.

37 Doin' It with CanDo
by Jeff Gamble
The first in a series of tutorials designed to make everyone a CanDo expert.

40 One-Stop Music Shop
by Rick Manasa
Is this going to change how you make music with your Amiga now and forever?

46 Scientific Visualization
by Joshua E. Colwell
Scientists use the Amiga to animate results and create videos to convey information.

48 Media Madness
by David S. Miller & Todor Fay
This article takes you "under the hood" and shows how Media Madness works. The authors have even included a programming example: the Yak Tool.

58 Design & Dingbats
by Dan Weiss
Design your own three-column newsletter using professional layout techniques.

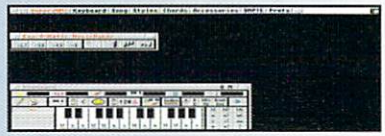
63 Learning C
by David Stockman
Find out what editors, compilers, and texts will best help you learn programming in C.

Reviews

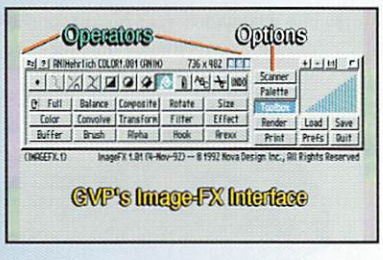
15 SuperJAM! 1.1
by Rick Manasa
This update breaks the four-note and the one-octave limitation to the Chord design feature.

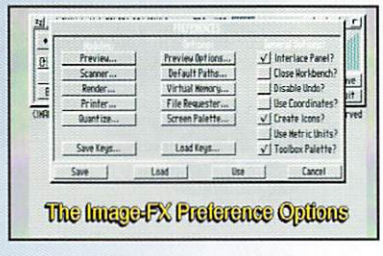
18 Image-FX
by R. Shamms Mortier
The combination of addressing selected areas with conversion/alteration tools makes Image-FX a wonderful addition to the artist/animator's toolkit.

20 T.A.B.S.
by Rick Manasa
A filer/launcher utility that uses the folders-in-the-filing-cabinet metaphor.



The SuperJAM! Ease-O-Matic





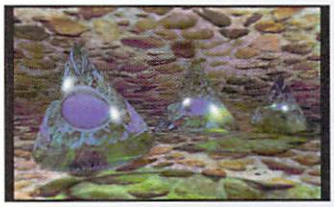
GVP's Image-FX, p. 18

Media Madness!

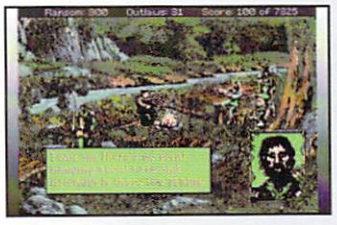


ARexx, p. 54





Super graphics in this month's Video Slot, p. 66.





Robin Hood and SimEarth are two great ways to bring fun and adventure to your Amiga, p. 83.

Columns

8 New Products & Other Neat Stuff
by Elizabeth Harris
This month: The African Rainforest, Click-Clack, Macro68, Zool, and more.

26 cli directory
by Keith cameron
Using LOCK and PROTECT, guard your disks, drives, and files from middle schoolers and other exuberant creatures.

34 Bug Bytes
by John Steiner
This month: PostScript interpreters revisited; VAXes and Valiant Little Terminals together; CD-ROM and SCSI devices, and more.

54 ARexx
by Merill Callaway
An introduction to ARexx arrays with a look at the *REXX Rainbow Library Volume of Stem/Array Functions.*

66 The Video Slot
by Frank McMahon
Examine the new graphics modes on the A4000 and A1200.

70 Roomers
by The Bandito
Is Apple pricing a threat to Amiga sales? Is CD-ROM mania gripping the computer industry? Will Kodak license Commodore to enable full Photo-CD compatibility?

83 Diversions
Become the intrepid test pilot in *Lords of Time*, control the entire planet in *SimEarth*, assume the role of Brandon in *The Legend of Kyrandia*, join the beautiful Maid Marian in *Robin Hood*; and try your hand at 16th-century Japanese military strategy in *Conquest of Japan.*

Departments

Editorial 6

List of Advertisers 80

Feedback.....90

Public Domain Software....93

DIVERSIONS EXTRA!

SPECIAL BONUS REVIEW!

Darkseed

Featuring the artwork of H.R.Giger
p. 96



GVP Introduces G-LOCK

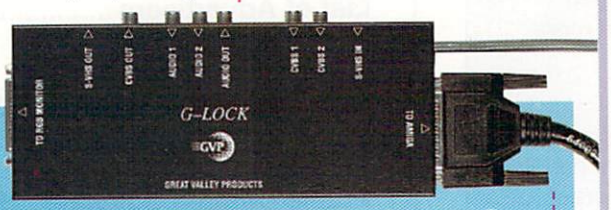
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Advertising Manager:	Wayne Arruda

1-508-678-4200, 1-800-345-3360, FAX 1-508-675-6002

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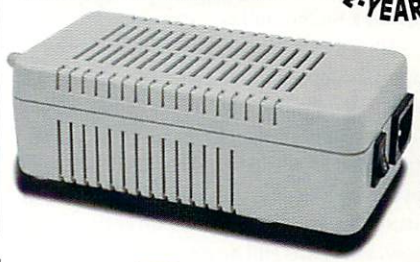
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EDITORIAL CONTENT

Thanks, Will!

It was a Thursday night and I had stayed late at the office. My family was out watching a local high school basketball game. I arrived home to a dark and silent house with only our cat for company. Being a twentieth century American, I immediately reached for the remote control and, being a male, began switching through the channels.

Click, Click, Click, Click. Like so many other American men, I have gained the ability to instantly tell if I want to watch a program by seeing only a few quick seconds of it. Click, Click, Click. Commercials are easily passed when they are recognized, however, the advertising agencies and commercial production houses are getting more clever in the way they disguise television spots. Sometimes you can watch an entire five seconds before you realize that this is not something you want to see.

Click, Click. Thank goodness for cable, before this I only had a choice of less than ten stations not to be interested in, now I have close to forty and the local cable company is installing fiber-optic cable through-out the city to add an additional ten stations.

Click, QVC home shopping, Click. Wait, what was that? For several parts of a second I had to switch from pushing the button that advances channels to pushing the button that would go back one. Click. Yes it was QVC but instead of porcelain figurines, model cars, or exercising equipment, they were selling something really neat. No, not industrial diamonds disguised under a variety of different marketing names. This was real neat stuff. This was Star Trek memorabilia.

But the celebrity they had flown in to supply background information to the wide variety of pictures, posters, medallions, and such, was Star Trek The Next Generation's Will Wheaton who plays Wesly Crusher (well not currently—you see he is away at Star Fleet Academy). OK so he is not currently on the show, but it was still neat to see him up there displaying pewter figures and uncut trading cards.

Wait. Were my eyes deceiving me? What was printed on that black T-shirt he was wearing? Several seconds went by as I watched the young actor sit casually and talk about being part of the cast and crew of STTNG. His yellow dress jacket was hanging just right so that the full image of his shirt could not be seen. The camera switched from the pull-away view to a close-up of Steve, the evening's host. Steve then asked a very important question that I cannot remember and then the screen switched to a close-up of Mr. Wheaton. There, resting under the lapels of the yellow jacket was the trademark of the Amiga's best known application, The Video Toaster.

Wait. Were my eyes deceiving me? What was printed on that black T-shirt he was wearing?

Yep, the Video Toaster emblem was there, peeking ever so often to the outside world as Mr. Wheaton turned or gestured. I was hooked. The show was scheduled from 9:00 PM to 11:00 PM and it was only a few minutes after 9:00. All thoughts of the ever-changing remote control left my mind as I waited to hear what Mr. Wheaton would say.

As it turned out, I did not need to wait long. Mr. Wheaton confessed to being a computer geek with an address on The Well. At one point he leaned back in his chair, drew the jacket lapels wide and proclaimed he was a Video Toaster geek also. He mentioned NewTek and their nifty Star Trek communicator-like cellular phones. In fact, Mr. Wheaton spent two hours not only promoting the special items valued by so many Star Trek fans, but also promoting computers in general and the Video Toaster in particular.

True, I would have been happier had Mr. Wheaton mentioned that the Video Toaster resides in an Amiga, but let's be fair, Mr. Wheaton is involved with television and he might not consider the difference between the Amiga and the Video Toaster. Yet, I am thankful. Mr. Wheaton offered two hours of prime-time exposure to the Video Toaster in a setting seen by Star Trek fans who are probably the best market CBM could hope to find. Where else do you find people interested in the future, and advanced technology?

The next day, I contacted the offices of QVC and asked if there were any stills available from the previous evening's show. They asked me to put my request in writing, but as of yet, nothing has been received. It was interesting though, that the offices of QVC are in West Chester, PA not more than five miles from Commodore USA's facility.

Whether it was intentional or not, whether Mr. Wheaton wanted to promote his favorite computer or was just running low on laundry, I wish to thank him for wearing that shirt. Not only did it possibly help promote the Amiga/Video Toaster that night, but it opened the door to a variety of possibilities.

Imagine if we could get Amiga users to wear Amiga shirts to televised sporting events, have Amiga-dressed members of studio audiences with David Letterman, or appear as game contestants in syndicated game shows with Amiga pins or medallions. Would this effort help to get commentators to start talking about the Amiga. Imagine John Madden taking time out to circle all the Amiga emblems he sees in the crowd as he describes a football game.

Seriously, we should be proud that Mr. Wheaton took the time to wear his Video Toaster T-shirt and talk about his interests. If more of us did that, the Amiga would never need to buy a piece of television time again.

Sincerely,

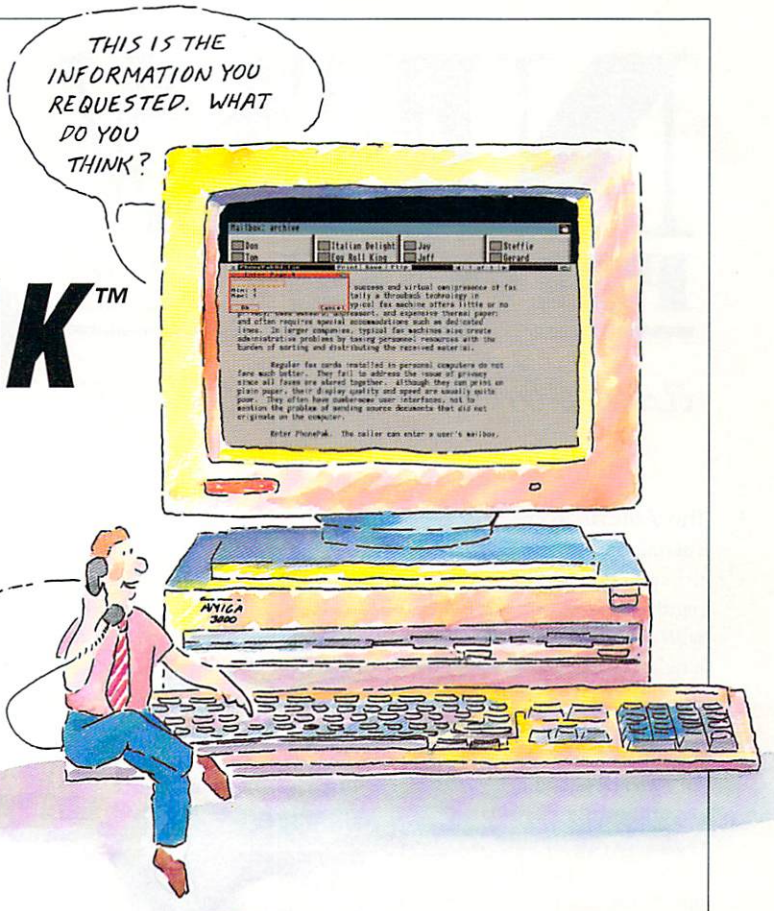


Don Hicks
Managing Editor

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GVP's NEW

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PHONEPAK'S EXCLUSIVE VFX™ TECHNOLOGY TAKES FAX AND VOICE MAIL INTO THE NEXT CENTURY!

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Now imagine all that technology working together as a single comprehensive information system all on one board.

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With a PhonePak VFX system installed on each of your phone lines you can:

- Receive faxes and store them on your Amiga's hard disk for on-screen viewing and/or plain paper printing at your convenience.
- Use PhonePak's advanced digital technology to record and playback voice messages.
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- View a fax onscreen and listen to a voice message about that fax at the same time — a GVP multimedia breakthrough!
- Send faxes to one or more numbers immediately, or via PhonePak's built-in scheduler.
- Record and play your own voice messages in standard IFF audio format using a fully configurable system of private user mailboxes.
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PhonePak Saves Time and Money

With PhonePak, you get a powerful, yet affordable, fax and voice messaging system that:

- Can be learned in no time with the simple, step-by-step user's manual.
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- Lets the caller decide whether to leave a message or speak with the called party.

And, you get something no other fax machine or computerized fax product can offer — privacy for every fax received.

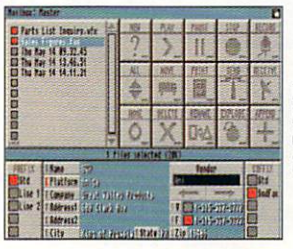
PhonePak Helps You Work Smarter

As you can see, anything fax machines, answering machines, and voicemail systems can do, PhonePak can do.

Plus, PhonePak is the only technology that gives you fax and voice information combined.

Whether you have a single phone line at home, or multiple lines in the office, once you install PhonePak, you'll wonder how you ever got along without it.

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Main PhonePak Control Panel

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KING OF PRUSSIA, PA 19406
U.S.A.

PHONE 215•337•8770
FAX 215•337•9922

PhonePak requires 2MB RAM and a hard drive, and is FCC certified for use in the United States.

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Circle 112 on Reader Service card.

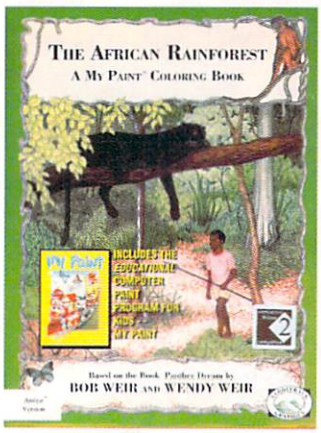
NEW PRODUCTS

and other neat stuff

The African Rainforest

Take a journey through the African tropical rainforest, prowl with the panther, swing through the trees with chimpanzees, or fly with the hawk. You can view a sampling of the thousands of creatures found in the African rainforest and hear many of their sounds.

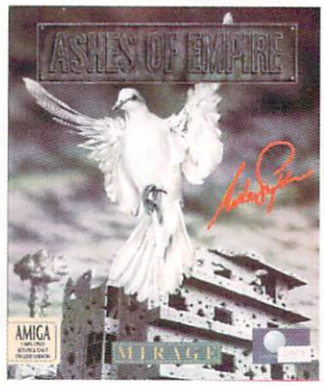
Enjoy coloring in the 23 drawings including: bats, tree frogs, the tiny dormouse, the sly civet, and more. Each picture has its own sound effect. The African Rainforest includes the program My Paint, an easy-to-use, educator-approved and classroom-tested paint program designed especially for children. *Saddleback Graphics, 12812 Garden Grove Blvd., Unit P, Garden Grove, CA 92643. Inquiry #234*



Ashes of Empire

Inspired by the tumultuous events in Eastern Europe, Mike Singleton and his team have created Ashes of Empire, his biggest game yet. Ashes is a complex fusion of adventure and strategy which places demands on all your powers of diplomacy and intelligence.

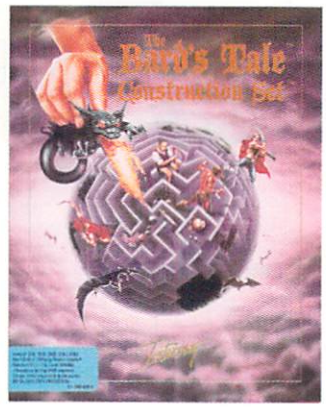
As you enter the heartland of your one-time great adversary, you must select a tactic to bring order to chaos, while at the same time avoiding the initiation of a nuclear conflict by an embittered and desperate people, mistrustful of your intentions. *Mirage Technologies Multi-Media Ltd, P.O. Box 202, Congleton Cheshire, CW 12 4 YR, (011) 44-260-299919. Inquiry #208*



The Bard's Tale Construction Set

All the dungeons, monsters, wizards, heroes, and villains that made The Bard's Tale™ series of games one of the all-time best sellers are back. And they're ready to join a roster of new characters and enter new worlds of fantasy and adventure. Worlds created by you, the dungeonmaster.

You design the dungeons! Where do you put the pits? Where do the stairwells go? Teleport squares? Anti-magic areas? Will you use hidden doors and illusory walls? You create the monsters to inhabit your dungeons! Design brand new monsters complete with eye-popping animations. Or create your own cast of ghoulish dungeon denizens by importing Deluxe Paint™ files. *Interplay Productions, 3710 S. Susan, Ste. 100, Santa Ana, CA 92704, (714) 549-24211. Inquiry #209*



Clik-Clak

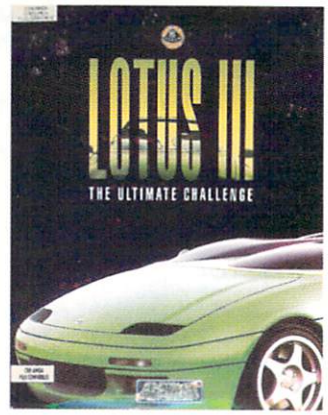
In Clik-Clak, a gear game, you connect moving gears to transform 12 wonders of the ancient and modern world into time pieces. You build the inner mechanisms by linking together gears of different sizes and colors in to the proper sequence while struggling against time, heat, and two gremlin-like creatures that torment you by rusting the gears or breaking off the mounting pegs. *Hollyware Entertainment, 13464 Washington Blvd., Marina del Rey, CA 90291, (310) 822-9200. Inquiry #210*

fingerTalk™

fingerTalk™ was created to help people learn fingerspelling both for their own use and so that they may communicate more easily with the hearing-impaired. fingerTalk uses a number of different teaching modes—Letter, Sentence, and Tutor—so that there is always one that's just right for your current ability. As you become more proficient, text files may be signed by fingerTalk to help you practice. A number of quotations and practice sentences are provided for you with fingerTalk. You may also create you own files to sign and can tell fingerTalk to add sound to its responses. *The Puzzle Factory, P.O. Box 986, Veneta, OR 97487, 1-800-828-9952 (Orders only). Inquiry #211*

Lotus III: The Ultimate Challenge

Lotus III combines all the best elements of the first two games, introduces a number of new features, and puts the control firmly in the hands of the player. The expanded range of options allows the player to alter the majority of features to suit themselves. As well as all the features brought over from the first two games. Crammed in are five new themed levels, each with its own unique graphic style, and new features that affect the handling of your car. Thers is the stunning new Lotus concept car, the M200. This car will never go into production, so this will be the only opportunity you will ever get to 'drive' one. On top of all that lot, there's a whole host of new music and sound effects and loads of new graphics. *Gremlin Graphics Software Ltd., Carver House 2-4 Carver Street, Sheffield S1 4FS, (011) 44-742-753423. Inquiry #212*



Macro68

Macro68 uses the new Motorola 68000 family assembly language syntax. This new syntax has been specifically developed by Motorola to support the addressing capabilities of the MC 68020, MC 68030 and associated co-processor chips, which their original syntax was incapable of doing. Also included in this package is NewSyntax, a utility that will automatically convert assembly language source from the old syntax to the new Motorola standard syntax. Source code examples for many useful utilities are included

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Only ImageFX gives your imagination total image processing freedom.

Whatever visual medium you work in—photography, graphics, video, animation—ImageFX is the one tool you absolutely must own!

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It's like having a professional art department at your fingertips.

ImageFX is faster, easier to use, more expandable, more adaptable and more powerful than any other product of its kind for the Amiga®.

Here are just a few ways ImageFX expands your visual horizons:

★ Scan in or framegrab from a full range of image capturing devices directly into your Amiga.

★ Use your Amiga as an image prepress, color correction system including, CMYK, RGB, HSV and YUV.

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Carsmear by Mike Vunck

★ Automatically convert image files to/from over 20 different file formats.

★ Create true, full motion polymorphic "morphing" animation just like they use in movies, commercials and music videos.

★ Generate single and dual image morphs; wave, ripple and spiral effects; water and glass-like distortions; and a wide range of 24-bit transitions.

★ Make your own add-on features with full ARexx™ and C programming language support.

★ Enjoy near "real time" painting in 24-bit color.

ImageFX is the most exciting and versatile full color, image processing and enhancement system ever made.

You owe it to your imagination to buy ImageFX.

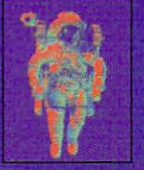
Image Processing
★ Regional Processing
★ Anti-Aliasing
★ Composite Imaging
★ RGB, CMYK, HVS Adjustments
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Special Effects
★ Full Motion Morphs
★ Single/Dual Image Morphs
★ 24-Bit Transitions
★ Waves and Ripple Effects
★ Spiral Effects
★ Water/Glass Distortion

Image Rendering
★ Amiga, ECS/AGA Modes
★ HAM-E, DCTV, GIF
★ Multiple Dither Controls
★ IV24, FC24, EGS 24-Bit Output

...and much more













Give your Amiga graphics and animations new magical powers — at an affordable price!

If you need ImageFX™ morphing power alone, CineMorph is for you.

CineMorph transforms any image, or images, from one to another quickly, easily and with the professional quality "morph" results you see at the movies and on TV.

With **CineMorph** you can:

★ Warp single or motion images, create full motion morphs, merge scenes, and perform digital dissolves.

★ Set different speeds for different parts of the morph.

★ Work quickly and easily with Amiga style controls, then output directly to any Amiga, DCTV™, or HAM-E™ systems — including 24-bit display boards like GVP's IV24™.



Remember: When you're in the market for morphing, and only morphing, **CineMorph** is the maximum performance morph power.

CineMorph is the must-buy morph software.

cinemorph™

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on disk. *Distributed by: The Puzzle Factory, P.O. Box 986, Veneta, OR 97487, 1-800-828-9952 (Orders only). Inquiry #213*



Migraph CS-6000

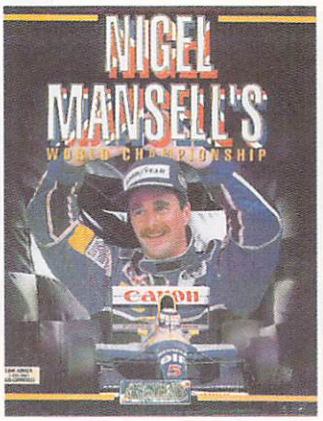
Migraph, Inc., developer of scanner and graphics solutions, announced the development of the Migraph CS-6000 color hand scanner. The retail price is $549 and includes the scanner, interface, power supply, and color scanning software. The Migraph CS-6000 features: six scanning resolutions; five scanning modes; a four-inch wide scanning window; software to scan and save color, greyscale, and monochrome images in popular file formats; adjustable brightness control; compact parallel interface with a cable to allow ease of installation; and more. *Migraph Inc., 32700 Pacific Highway S., Ste. 12, Federal Way, WA 98003, (206) 838-4677. Inquiry #214*

MONTAGE

InnoVision Technology has announced the release of MONTAGE ($499.95), a new software solution for video titling, image composition, and effects presentation on the NewTek Video toaster. The first major third-party application to offer such direct support, MONTAGE integrates smoothly into the Toaster environment and provides professional-quality text display, DVE transition sequencing, and 16 million color graphics output. With an eye toward the needs of both video producers and videographic artist, MONTAGE has been engineered to provide maximum flexibility and ease of use while offering an array of possibilities for creative expression in the video medium. *InnoVision Technology, 1933 Davis St., #238, San Leandro, CA 94577, (510) 638-0800. Inquiry #215*

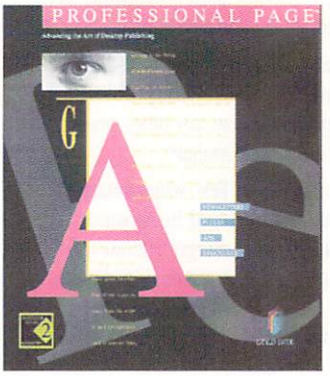
Nigel Mansell's World Championship

In World Championship you take part in the full 1992 Grand Prix season. Each country and each of sixteen tracks is represented. Obviously, your aim is to emulate the success of Nigel Mansell, and win the World Championship as fast as possible. Gremlin Graphics reccommend that you use the FreeWheel joystick when you play Nigel Mansell World Championship for added realism. *Gremlin Graphics Software Ltd., Carver House 2-4 Carver Street, Sheffield S1 4FS, (011) 44-742-753423. Inquiry #216*



Professional Page 4.0

The new features incorporated into Professional Page for version 4.0 offer a dramatic increase in the power of the application. Professional Page 4.0 requires the use of a hard disk drive and 2MB of RAM. Use of the Genies (which are automated sequences of operations) requires version 1.15 or higher of ARexx. The additional capabilities can be grouped into four general categories: enhanced font support, new page design tools, improved printing capabilities, and Genies and ARexx support. *Gold Disk, Inc., 5155 Spectrum Way, Unit 5, Mississauga, Ontario, L4W 5A1 Canada, (416) 602-4000. Inquiry #217*



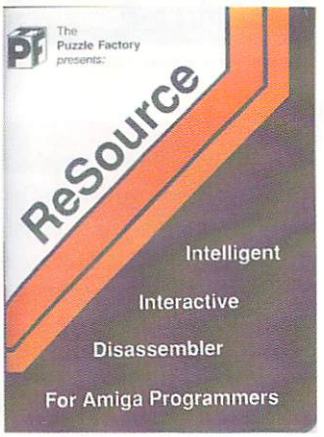
Quick Print & UPD Shared Library

Quick Print ($500, includes library) supports IFF, RAW, and ILBM formats, including HAM, Extra-Half-Bright, and 24-bit images. Quick Print provides an easy way to combine and print high-quality images created on the Amiga using the Sony UP-D7000 color printer. Pages may contain a single image or combine multiple image file formats onto a single page. Features include: image cropping, manual color correction, full multitasking support, print pitch adjustments, multiple print capability, orientation controls, and more. Requires Commodore compatible SCSI controller, Workbench 2.0 or higher, 2MB available RAM (8-9MB recommended), Sony UP-D7000 printer & SCSI cable.

The UPD Shared Library ($250) allows programmers and other applications to directly support the UP-D7000 printer with as little as five lines of code, and no additional disk space. End users may then purchase the library from KarmaSoft to allow these applications to utilize the UP-D7000 printer. *KarmaSoft, P.O. Box 1034, Golden, CO 80402-1034, (303) 490-2939. Inquiry #218*

ReSource

ReSource is an interactive disassembler for the Amiga computer. Written entirely in assemble language, ReSource is blindingly fast! ReSource can simplify your work in a variety of ways. You can patch files on disk or programs in memory, even when running. You can locate image data in memory, convert it to binary, then save to a file and include in your program: instant gadget images! ReSource has even been used to reconstruct MFM data on corrupted disks. You may also inspect and perhaps alter boot blocks. ReSource comes with tools to allow you to view and edit macros and document your keybindings. Extensive printed documentation including tutorials is provided. *Distributed by: The Puzzle Factory, P.O. Box 986, Veneta, OR 97487, 1-800-828-9952 (Orders only). Inquiry #219*



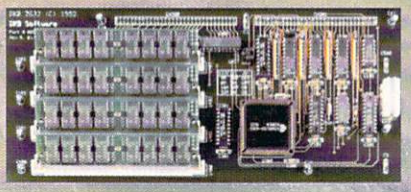
Wave Writer

Unili Graphics is very proud to announce the release of Wave Writer—a revolutionary product that generates render-ready objects and scenes for use with LightWave 3D. Wave Writer ($129.95) requires Workbench 2.0, Newtek Video Toaster/LightWave 3D. Supports all Broadcast Fonts 3D for

Complete your Amiga with the latest hardware from DKB

DKB 2632™

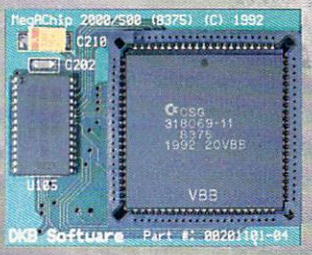
112 Megabytes of RAM for the Amiga A2500 and the A2630



- Now you can go beyond 4 Megabytes of 32 Bit memory.
- Expandable up to 112 Megabytes of 32 Bit memory.
- State-of-the-Art design breaks the 32 Megabyte limit and allows the use of different size memory modules in the same bank.
- Using 32 Bit wide SIMM modules enables you to install only one module to add up to 32 Megabytes at a time, modules are available in 1, 2, 4, 8, 16, and 32 Megabytes.
- Installs onto the CBM A2630 Accelerator card and the IVS Vector 030-25
- Does not use autoconfig space, uses 32 Bit address space so that you can still use your AT Bridgeboard with more than 6 Megs of Fast RAM.
- Excellent for Desktop Video, Desktop Publishing and Multimedia applications.
- Fully compatible with Workbench™ 1.2, 1.3, and 2.0.
- Compatible with the MegAChip 2000/500™ and MultiStart II™ ROM board.
- Compatible with the Vector 030-25 accelerator from IVS.
- Compatible with the Video Toaster system, Amiga A2500, A2000HDA/100.
- Compatible with the CSA Rocket Launcher™ 50MHz upgrade for the A2630 accelerator card.

MegAChip 2000/500™

2 Megabytes of Chip RAM for the Amiga A2000, A500, CDTV & Video Toaster



"The MegAChip 2000/500 should be standard equipment on every Video Toaster System."

Jim Plant - Publisher/Editor Video Toaster User

"The MegAChip 2000/500 is a must own for anyone that wants to use Toaster Paint™ or Multitask with the Video Toaster."

Lee Stranahan - Writer of the Video Toaster 2.0 manual Tutorials also featured in the Desktop Images Video Toaster Tutorial tapes.

"I would advise Toaster users who make use of Toaster Paint or LightWave™ to add DKB's MegAChip 2000/500 to your system as soon as possible."

Tim Doherty - Video Toaster User

The MegAChip 2000/500 allows you to upgrade your Video Toaster, Amiga A2000, A500, and CDTV™ to 2 Megabytes of Graphics Memory.

The MegAChip 2000/500 is a needed addition to your system if you are working with Desktop Video, 3D Rendering & Animation, 24-Bit Paint, Multimedia or Desktop Publishing.

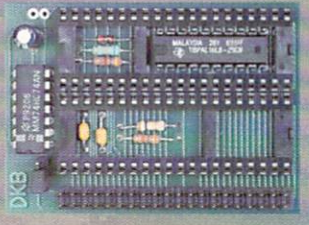
Scala MultiMedia 200 requires 2MB of Chip RAM which means an A500 or A2000 needs a MegAChip 2000/500 installed to use this software

Fully compatible with the Video Toaster™, OpalVision™, VLab™, IV-24™, DCTV™, Ham-E™, and most genlocks and framebuffers.

Fully compatible with most 68030 and 68040 accelerator cards.

MultiStart II™

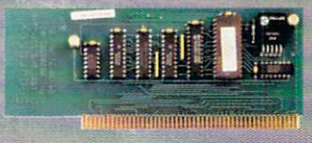
For the A500, A600 & A2000



Allows A500 A600 and A2000 owners to install Kickstart V2.0 and V1.3 ROMs and switch between them with the keyboard. No software required for operation. Lets you stay compatible with your software. No external wires or switches required. This MultiStart is compatible with the MegAChip 2000/500, VXL030., and CSA MMR accelerators for the A500 and also most other products that install inside the A500. This is the ROM switcher that Commodore Amiga Technical Support sells to developers.

SecureKey™

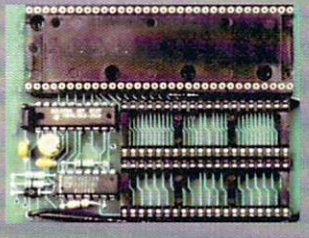
Access Control System For The A2000 & A3000



The SecureKey is a hardware security device that installs in any A2000 or A3000 or Video Toaster system. The SecureKey allows you to have one access code for your Amiga. The SecureKey will not allow access to your Amiga without the right security code, period. You can't boot off of a floppy or bypass it in any manner. If you need to keep your system safe from unauthorized use - Want to make sure that no one can delete files from your harddrive or steal your work then you need the SecureKey. This means that if your system has files such as animations, documents, presentations, C code, or any type of confidential information, you can be assured that the files on your harddrive are safe. Keep your Amiga safe from those that may otherwise unknowingly destroy your information. Requires Kickstart V1.3 or above. The SecureKey is fully compatible with Kickstart V2.0.

KwikStart II™

Use Kicksart 2.0 in your Amiga A1000



Allows A1000 owners to install V1.3 and V2.0 Kickstart™ ROMs and switch between them. Upgrade to the latest operating system and still be compatible with software that requires Kickstart V1.3. Use the latest V2.0 operating system without using up your system memory. Fully compatible with Kickstart V2.0 and Workbench V2.0. Uses standard Commodore ROMs for easy upgrades. Allows you to boot faster because you only need to load Workbench. Works with Kickstart V2.0, V1.3, and V1.2. Compatible with the Insider memory expansion boards. Also compatible with most processor accelerators. Keyboard switchable between two ROMs or between one ROM and disk based Kickstart. No external wires or switches required

Insider II™

1.5 Meg in the A1000



From the maker of the first internal RAM board for the Amiga 1000: the original Insider™ by DKB Software. Allows A1000 owners to add up to 1.5 Megs of Fast RAM internally. User expandable in 512K increments using 256K x 4 DRAMs. Includes battery-backed clock calendar. Comes with software for the clock and testing RAM. Simple installation, no soldering required. The Insider II is compatible with the KwikStart ROM board. Also compatible with most processor accelerators.

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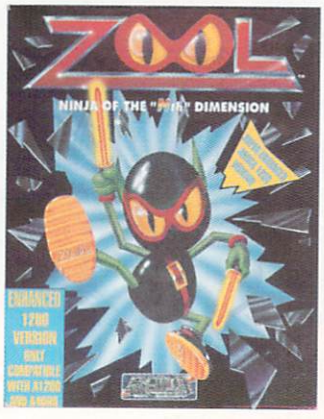
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In Zool you play the interstellar cosmos dweller from the Nth dimension. You must guide Zool through thousands of screens of surreal and bizarre action in a bid to bring the intergalactic Ninja back home. You must take Zool to the limits of the universe—to the outer limits of the known universe, through quite a bit of the unknown universe, and beyond the fairly well known but-I-wouldn't-want-to-walk-through-it-at-night-on-my-own universe. Before reaching home, Zool has to successfully work through all manner of bizarre situations, worlds, and enemies. The only way to do this is by exploring each world until the exit is found, and progressing onto the next one. It sounds fairly straightforward, sure, but when you add in the enemies, strange features, and surreal events, this is one journey that's going to be, well...weird. *Gremlin Graphics Software Ltd., Carver House 2-4 Carver Street, Sheffield S1 4FS, (011) 44-742-753423. Inquiry #220*



•Books•

A1200 Insider Guide

The Insider Guide to the Amiga A1200 is a totally practical guide to using the computer, touching upon all the important aspects of Workbench 3.0, utilities, Preferences, and AmigaDOS. In 24 chapters, The Insider Guide to the Amiga A1200 brings the reader steadily closer to mastery over the potential of their computer. It covers everything, from setting up, using disks and running programs to using the Shell, AmigaDOS scripts, adding icons, tools, viruses, Commodities, and printer graphics. *Bruce Smith Books Ltd., Smug Oak Green Business Centre, Lye Lane, Bricket Wood, Herts, AL2 3UG, (011) 44-923-894-355. Inquiry #221*



•Other Neat Stuff•

Amiga Air & Space Software

Looking for that hard-to-find Astronomy software for your Amiga Computer? Kinetic Designs has collected a number of disks full of public domain and shareware space-science-related software for Amiga computers. Included are satellite trackers, planetary orbital calculators, siderial time calculators, weather-related programs, deepsky databases, gravity simulations, telescope design, space art, and much more. A set of 12 disks (over 8MB worth), is available for $29.95. Individual disks are available. For a catalog, send a stamped, self-addressed envelope with two stamps postage requesting "Amiga disk catalog." To order, send a check or money order. *Kinetic Designs, P.O. Box 1646, Orange Park, FL 32067-1646. Inquiry #222*

Amiga Troubleshooter

The Amiga Troubleshooter (12.95) from The Grapevine Group is a handy lamenated reference card detailing common Amiga problems and possible solutions. The card pinpoints nearly all the difficulties an A500/1500/2000/2500 user is likely to encounter. Expensive repairs can be avoided even if the user has had little or no previous experience. By following the simple-to-use chart, faulty plug-in chips can easily be identified and replaced, saving lots of money and down time. *The Grapevine Group, 3 Chestnut Street, Suffern, NY 10901, (914) 357-2424. Inquiry #223*

Interplay Licensing Agreement

Interplay Productions announced it has signed with Paramount Licensing Group an eight-year multi-product, multi-platform Star Trek® licensing agreement. This multi-platform agreement enables Interplay to exclusively develop a line of Star Trek products. *Interplay Productions, Inc., 17922 Fitch Avenue, Irvine, CA 92714, (714) 553-6655. Inquiry #224*

Killer Graphics

A new series of video tutorials has immerged under the banner "Killer Graphics." The producers have targeted the Amiga platform and those interested in producing graphics for video. All videos in the series are project based, showing real projects in real time. Volume I will teach you to create dramatic logos and free-hand art. Volume II will teach you to animate 24-bit, 3-D logos and record them to videotape in real time without single-frame recorders. *Horizon West Productions, P.O. Box 2729 Corrales, NM 87048, (505) 891-1689. Inquiry #225*

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R.A.W. Entertainment has a new address, telephone number, and fax number. *R.A.W. Entertainment, Inc., 957 Nasa Road One, Ste. 146, Houston, TX 77058-3098, Tel/fax (713) 286-2386. Inquiry #227*

Soft-Logik Updates Art Expression

The 1.02 Update Disk and the Art Expression Font and Art Bonus Disk will be sent to all registered owners of Art Expression free of charge. Version 1.02 improves many features of Art Expression. Adobe Illustrator and IFF DR2D support have been improved greatly. The Preferences printing, which was the only major difficulty with the first releases, has been rewritten. *Soft-Logik Publishing Corp., 11131 S Towne Sq., Ste. F, St. Louis, MO 63123, (314) 894-8608, (800) 829-8608. Inquiry #228*

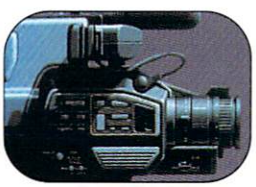
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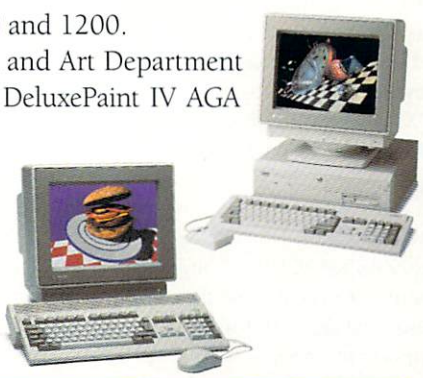




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The Switch Man ($46.95) comes complete with everything you need to attach two video displays to one monitor. It allows the user of any bridgeboard—VGA, SVGA card to share the same monitor as your Amiga video output. This manual switch easily makes connecting two 15-pin (VGA) outputs to one 15-pin monitor. With the flick of a switch you can view either your Amiga graphics on your monitor or your PC graphics. The Switch Man even comes with all the necessary cables to hook up both video outputs to your monitor. *Mach 10 Computer Products, 28 Heathrow Manor Court, Baltimore, MD 21236, Inquiry #230*

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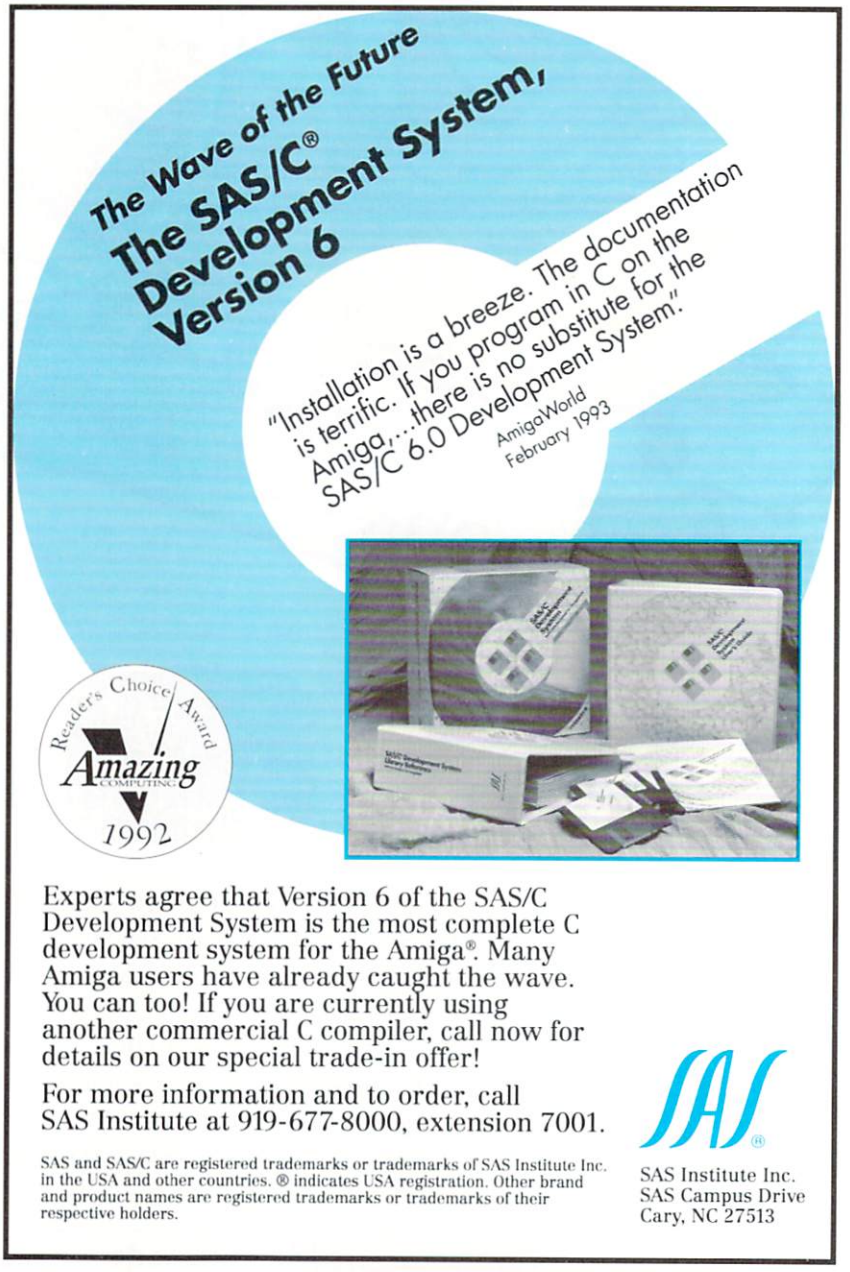
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New Products and Other Neat Stuff is compiled by Elizabeth Harris.



Circle 128 on Reader Service card.

REVIEWS

SuperJAM! 1.1

by Rick Manasa

AS MENTIONED EARLIER, one of the easiest ways for the video professional to get quick and dirty music beds is to combine the *One-Stop Music Shop* with *SuperJAM!* The 1.1 version of SuperJAM! ($149; upgrade: $29.95) has added many features in addition to One-Stop Music Shop support. Here's a quick look at what's new and improved.

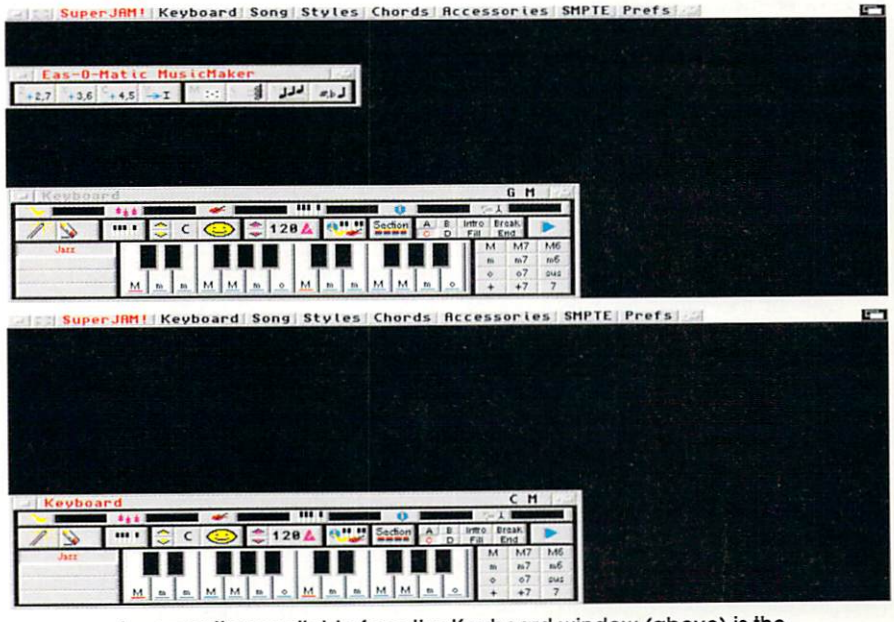
If SuperJAM! senses that the One-Stop Music Shop card is installed, it will default to the One-Stop Music Shop instead of TurboSounds as the internal sound source. It will also use the MIDI port on the card, freeing up the serial port. You can override the use of the One-Stop Music Shop sounds from within SuperJAM! if you'd like. SuperJAM! will also support the General MIDI set of sounds. There is a One-Stop band file included on the One-Stop Music Shop disk that will use the default settings on the One-Stop Music Shop card as a SuperJAM! band. It couldn't get much simpler.

Groovy, Baby

There are other changes to SuperJAM! as well. A new Grooves feature lets you select one of four changes within a Style that alter certain aspects of the Style. These are variations, or styles within a Style. They increase in complexity as you move from Groove A to D, with Groove C being the default Groove. This helps SuperJAM! sound less like a computer music program and more like a band of humans bashing away. Each Style can have its own set of patches. Whenever you change Styles, a new set of user-selected sounds can be saved and loaded. Grooves can be accessed from either a Section window or a Styles window. You can use them as you would use the Fill, Intro, etc., options of earlier versions of SuperJAM!

Long Chords Are In

One of the criticisms most frequently voiced about the first release of SuperJAM! was the one octave limitation to the Chord design feature. The programmers at Blue Ribbon were listening, and they've provided SuperJAM! with a two octave Chord window and busted the four note limit—you can select all 24 displayed notes. This allows for more realistic chord voicing as well as what they call "slash chords." A slash chord would be a chord with an unusual bass note, like a C chord with a D bass (written C/D). You can save lists of chords from the Chords window as well. This would make it easy to generate your favorite set of chords for any Style and have them available for instant loading. Chords that work well with Rock might not sound as good in Jazz. This is a handy way to help you keep things organized. In addition, the interface has been improved. A scrolling window of chords replaces the Select button and the Enter and Remove buttons have been replaced by menu commands. All changes made to the chord list are saved automatically when you close the window. Be careful with this—any changes you make will be saved to the list, good and bad. If you're experimenting



A new option available from the Keyboard window (above) is the Ease-O-Matic Music Maker (top).

and want to exit the window without saving any changes, be sure to select Revert from the Chord List menu before leaving.

There are three new buttons in the Define Chords window, designed to give you yet more control over how a chord sounds. Slash chords have already been described. The Invertible button either prevents a chord from or allows a chord to be inverted. Some chords just don't sound good when they stray from the root position. Chord Size toggles between sending the bottom three or four notes to the Bass and the top three or four notes to the other instruments. Sometimes this can create top-heavy chords. Top Chord Octave will lower the top part of the chord by an octave to remedy the situation.

Stereo TurboSounds

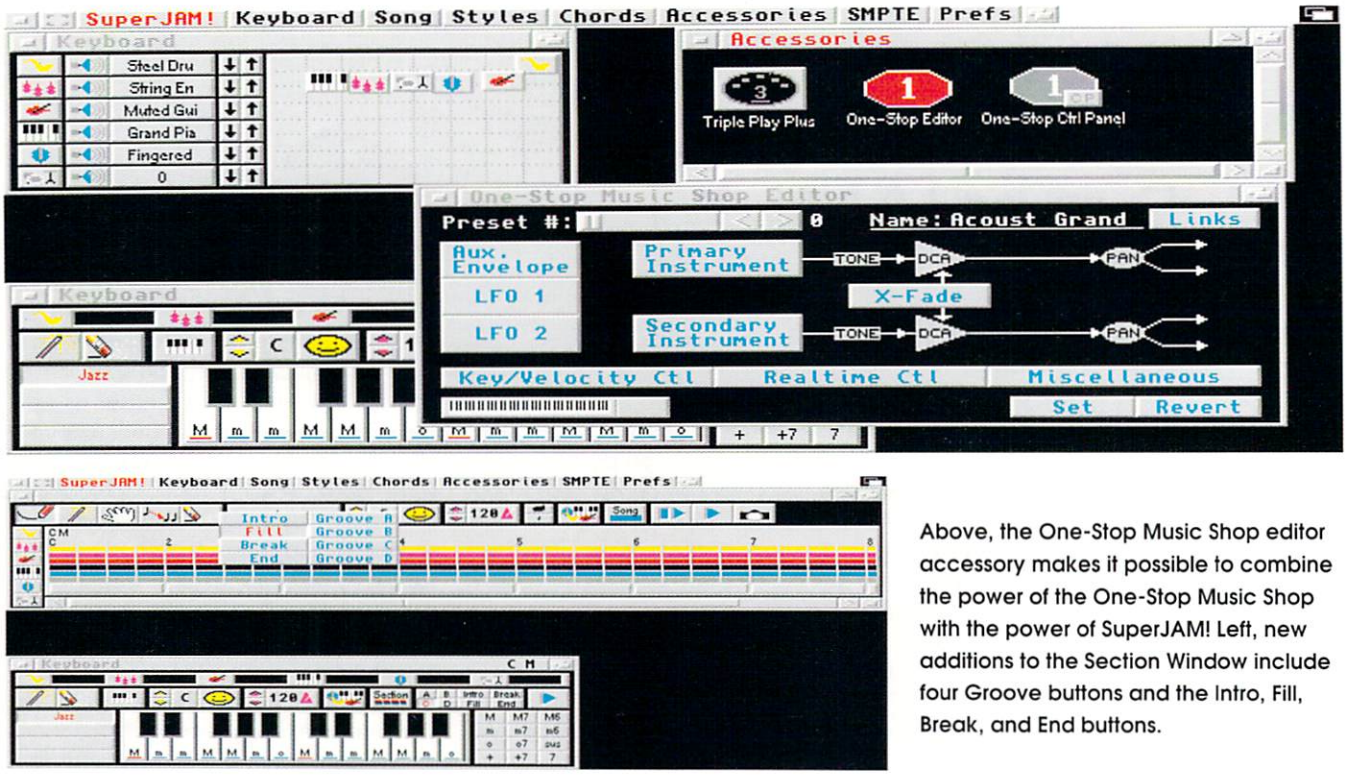
One of the other new features of SuperJAM! is stereo TurboSounds. These can be created and played only with the new version of SuperJAM!. Old TurboSounds will still play back in mono. MIDI controller 10 (panning) is partially supported, as is the Workbench 2.0 file requester, double width and double height screens. You make your panning selection on the Mixing Grid, an area on the right side of the Band window. It is a grid with six icons representing the six instruments available in SuperJAM!. Placing an icon toward the left or right side of the Grid sends an appropriate MIDI controller 10 message, while placing the icon toward the top or bottom of the Grid sends an appropriate MIDI controller 7 (Volume) message. This makes it easy to see where your instruments are spread across the stereo spectrum, as well as how loud each instrument will be in relation to each other. Just grab an icon and drop it where you want. Stereo TurboSounds will either come out of the right or left speaker. It is not possible yet to spread a TurboSound across speakers.

The Keyboard window has undergone quite a few changes. The current chord displays in the Keyboard window title bar. As the chords change, so does the display. The Fill button has been replace by an Intro, Fill, Break, End, and four Groove buttons. To make space in the Keyboard window for all these new buttons, the Solo and Piano button have been combined into a toggle button. The Intro, Fill, Break, and End selections are copies of those options available in the Section window. The Grooves are also selectable from the Section window. As before, changes made in the Keyboard window do not affect a Section. Think of the Keyboard window as a kind of audition window or scratch pad. Try out the different embellishments here to help you determine how you'd like to use them in a Section.

Eas-O-Matic MusicMaker

Another new option available from the Keyboard window is the culinary-sounding Eas-O-Matic MusicMaker. This is a surprisingly powerful tool for creating very good sounding music. The Eas-O-Matic MusicMaker uses the Chords defined in the Keyboard window to make decisions about chord selection and melody design. It selects a "good" sounding chord and melody note each time you hit one of the buttons or Amiga key equivalents. It's hard to describe, but it's easy to use.

An especially nice touch of this new version of SuperJAM! is the Use Style Patches option. This will change the sounds of the One-Stop Music Shop to match the style you select. If you've written a section in a Rock style, for example, and then decide you'd like to hear what it sounds like in the Motown or Hip Hop style, SuperJAM! will change your patch settings for you. All you have to do is select the Style—SuperJAM! does the rest. Both the One-Stop Music Shop editor and the Control Panel can be



Above, the One-Stop Music Shop editor accessory makes it possible to combine the power of the One-Stop Music Shop with the power of SuperJAM! Left, new additions to the Section Window include four Groove buttons and the Intro, Fill, Break, and End buttons.

run as Accessories from within SuperJAM! as well. Lastly, MIDI Files created with SuperJAM! can be played with the One-Stop MIDI File Player.

You'll find matters just slightly different when running SuperJAM! as an Accessory to *Bars&Pipes Professional*. SuperJAM! will always generate sound if you have the SoundEngine Tool at the end of a pipeline, regardless of the Thru/Mute/Play select at the end of the pipeline. You can also cut and paste Patterns to the Bars&Pipes clipboard. This will let you create something in either SuperJAM! or Bars&Pipes for use in either program. All other functions and features are the same.

Wish List

I'd like to have more control over how and where SuperJAM! installs files. Outside of the general directory, SuperJAM!'s installation program locks you out of the decision-making process. In some cases this is annoying and in others it requires you to make corrections. For example, the installation program copies the SJam.paccess and TurboSound.tool into a new drawer it creates called Bars&Pipes Professional. You must then copy these files to the appropriate drawers. I must have tried to load the SuperJAM! Accessory into B&P Pro a half-dozen times before I discovered it wasn't in the Accessories drawer. A simple note in the ReadMe file or installation program would have been helpful. What if you don't want all the Demo and Style files copied? Well, that's just too bad. You'll have to delete the unwanted files after the installation. And you'd better have over 500K free space in the designated partition or the program won't be able to complete the installation.

There still isn't a way to defeat the chord placement grid. If you want a chord on the upbeat, you'll have to take a Snapshot and go into the Pattern editor, or you'll have to save it as a MIDI file and take it into a sequencer package for editing. What a nuisance!

The variety of styles available in SuperJAM! has most other programs of its type beat hands down. Nevertheless, I'd like to see more Jazz and Latin styles. If the designers can see the value of three Rock styles, surely they can toss in a merengue, tango, fox-trot or any of a dozen standard dance beats that are still missing.

The General MIDI implementation is idiot proof. Why not a similar treatment for other instruments? At least give us accurate drum maps for the Proteus, Alesis HR-16, Roland R-8, etc.

Bars&Pipes has a Loop feature which will let you play a certain section up to eight times, recording your input into a separate buffer each time. Why not something similar for SuperJAM!? I'd love to be able to Snapshot a dozen takes and then review them at my leisure. As it is now, you've got to make up your mind whether to keep or to trash a take before the loop is done.

Conclusions

If you don't have SuperJAM! now, you'll find it a very easy to use package that generally delivers on its promise. If you're one of the people who started with SuperJAM! when it first hit the market, you'll be pleased with the changes and improvements made. While far from perfect, it is a significant improvement and well-worth upgrading to. Although I may still have my problems with SuperJAM!, one thing should be clear: I think that SuperJAM! and the One-Stop Music Shop are a match made in heaven. It doesn't matter how skilled at composition you are, these products working as a team will make your musical life easy, more fun, and more productive.

SuperJAM! 1.1
The Blue Ribbon Soundworks
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Special Requirements: Amiga 500, 1000, 2000, 3000 or 4000 with at least 1MB memory and Workbench 1.3 or higher

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Image-FX

R. Shamms Mortier

AMIGA DEVELOPERS KEEP a sharp eye out for program categories that are hot. One of the warmest on the Amiga platform is that of image translation and manipulation. Most famous among these are ASDG's *ADPro* and BlackBelt's *ImageMaster*. For a good while they have gone unchallenged in the marketplace, and both have nestled into a deep user network. But good things on the Amiga always excite competitive effort, which benefits all users in the long run. Most Amiga obsessives purchase all of the software that addresses their area of interest anyway, even if just to glom onto that one special tool a new package might offer. There are two or three new image processing packages on the way or recently entered into the arena, and GVP's *Image-FX* is one of them.

The Image-FX package is really a collection of modular programs, the two most important of which are Image-FX and GVP's *Cinemorph* morphing software. I have already reviewed the 1.0 edition of Cinemorph in *Amazing*, so I will concentrate my remarks on the Image-FX program.

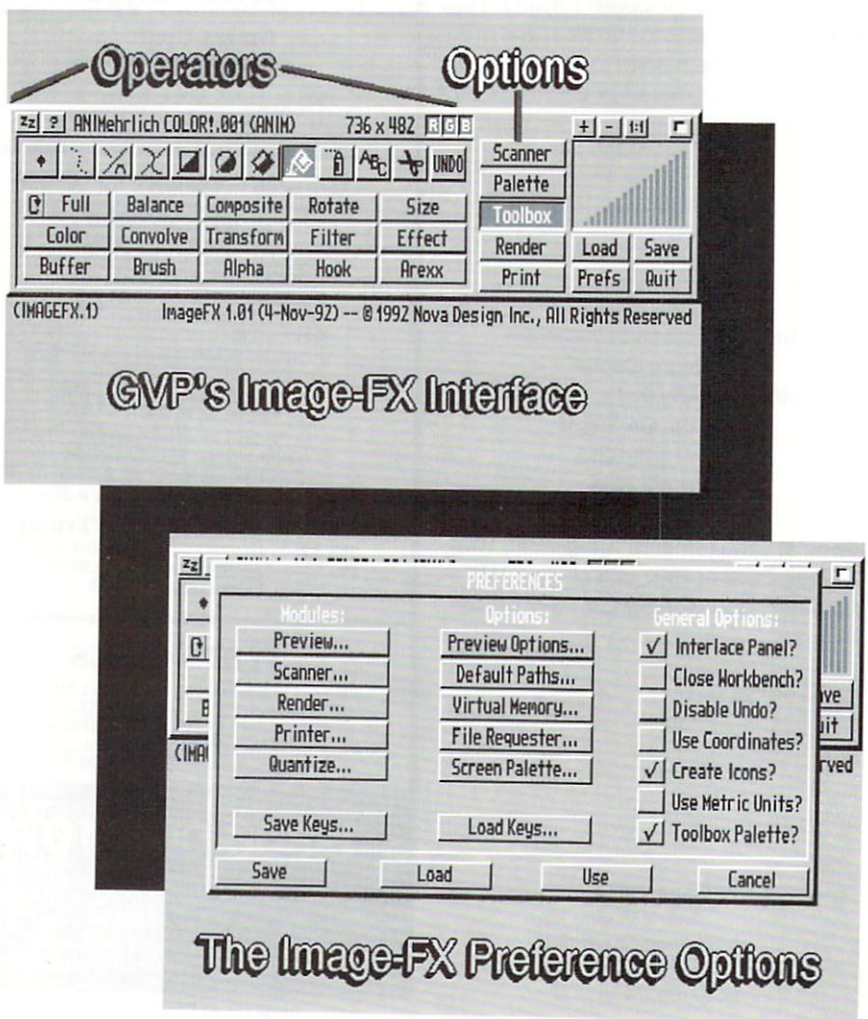


Image-FX works on images, so you have to import an image to take advantage of the image operators. Currently Image-FX imports images in a number of formats. This includes ILBM's (Amiga generated files including 24-bit), Alias, ANIM (you choose a frame), BMP, DCTV, DPIIE (IBM), GIF, HAM-E, JPEG, PBM, PCX, UNIX PBM, TARGA, TIFF 5.0. VMEM, and more. All of the import/export configurations are expandable as with the Amiga's other image processing software. Image-FX also hooks up directly to several scanner models, with no doubt more to come. This includes the JX-100 and the ES300C, as well as the Progressive Peripherals' *FrameGrabber*. Images can be saved as Working Screen, separate buffer, and rendered image as ANIMs, BMPs, Clipboard, GIF, and ILBMs) or you may save out the 24-bit data as any of the former plus JPEG, Rendition, PBM, Sculpt, Targa, TIFF, or VMEMs).

There are five pathways that are targeted in the main Image-FX requester (right side of Figure 1). The Default is the Toolbox (Figure 1), but you can also access the Scanner, Color Palette, Render Module, and Printer. Scanners and printers must first be loaded in. The bar chart looking graphic on the far right of the Toolbox area is really a visual timer which lights up as an operator is performing its task, letting you see how far along a process is. Various options are invoked by accessing the Preferences screen (Figure 2). Some of these options are new to Amiga software, like allowing you a choice of file-requester formats and virtual-memory space. It's nice being able to select your favorite defaults and save them to disk. You can also save and load sets of macro commands targeted to specific keys on the keyboard, making Image-FX truly customizable. The palette area has all of the familiar gadgets for customizing your picture's colors. The printing screen has two basic modes, Preferences Printer and PostScript. The PostScript alternative is nicely designed, allowing you to choose between EPS and true PostScript and ASCII or Binary.

Doing It to It!

The toolbox screen is the place where all the action begins. From here, various operators can be switched on to alter your imported image. In addition to the operators, there is a paintbox-like list of familiar

Figure 1, top left, shows the main interface. Figure 2, bottom left, shows the preferences screen.

tools included. Let's look at the operators Image-FX contains. To begin with, the top left first-of-fifteen gadgets in Figure 1 tells the program the area that is to be operated on. This is the Region Selector. The choices are Full, Brush (a cutout brush), Flood (selects a region by similarity of color), Free (selection by free form), Poly (selection by poly area), and Box. Balance is used to adjust the color, brightness, contrast, and gamma attributes of the graphic. Composite allows for the combining of imported images. Rotate operates on either the whole image or the brush. Size operates in the same manner with scaling, cropping, or reworking the aspect ratios. Color Effects include a variety of options, from solarization and posterizing to some wonderful halftoning alternatives. A customizing operation even remaps the color according to the way you manipulate a graph of the output.

Under the color option is one of my favorite effects, the custom operator. It allows you to interactively draw a color curve that is applied to the object. With this effect it is possible to achieve a Toaster-like "Chroma-FX" look very easily. Experimenting with different curves and keeping notes gives you a large repertoire of possibility. In addition, GVP has included some primitive color maps that you can load in, like "destroy" and "bumps." The convolve operator works like the competition's with the addition again of primitive selections that can be loaded in—from bas-relief to deep to jiggle and more. One of my favorites is "wood" which applies a wood-like texture to the selected visual area. "Transform" flips the image and also is one of the best mirroring tools available, cutting the selected area in two and mirroring half of it vertically or horizontally. Filter allows you to filter the image in optional ways. "Effects" include oil transfer, dispersion, roughen, and distortion. The Buffer creates and alters saved buffers, while a Brush menu allows for the manipulation of graphic brushes. A full 8-bit Alpha Channel allows you to apply specific effects to the image overall. Hooks are yet another series of effects—my favorite here being "BlackHole." A full ARexx port adds batch animating as well as other features.



Circle 151 on Reader Service card.

Conclusions

The combination of addressing selected areas with conversion/alteration tools makes Image-FX a wonderful addition to the Amiga artist/animator's toolkit. The modular approach means that new operators will be added as this software matures. Impressive in Image-FX are the image responses to the various operations, and also the choice and manipulation of areas that can be operated on. This is also a natural marriage to GVP's morphing software, as you can create unique keyframes that are then morphed from one to the other. I was able to crash my system twice during my experiments. Each time, I tried to perform an illegal operation but the program was unforgiving. There was an especially nasty crash when I tried to re-render a picture in laced mode, completely blacking out my screen and trashing the image in the process. This should be changed to a kinder, gentler warning flag.

What GVP should consider is incorporating the region effect options into their Cinemorph software. It is extremely intuitive to use these options, and it makes image processing very easy. If this were part of their morphing options as well, it would get away from the coarseness and unnecessary complications afforded by the standard morphing grid, and set a new, less-complicated lead that other developers would no doubt follow. Overall, this is another great image-processing package for the Amiga. I understand that AGAtha support will be added to the next upgrade along with other operators, loaders/savers, and options. This package is well worth adding to your Amiga artist's toolkit.

Image-FX
Great Valley Products
600 Clark Avenue
King of Prussia, PA 19406
(215) 337-8770
Inquiry #236

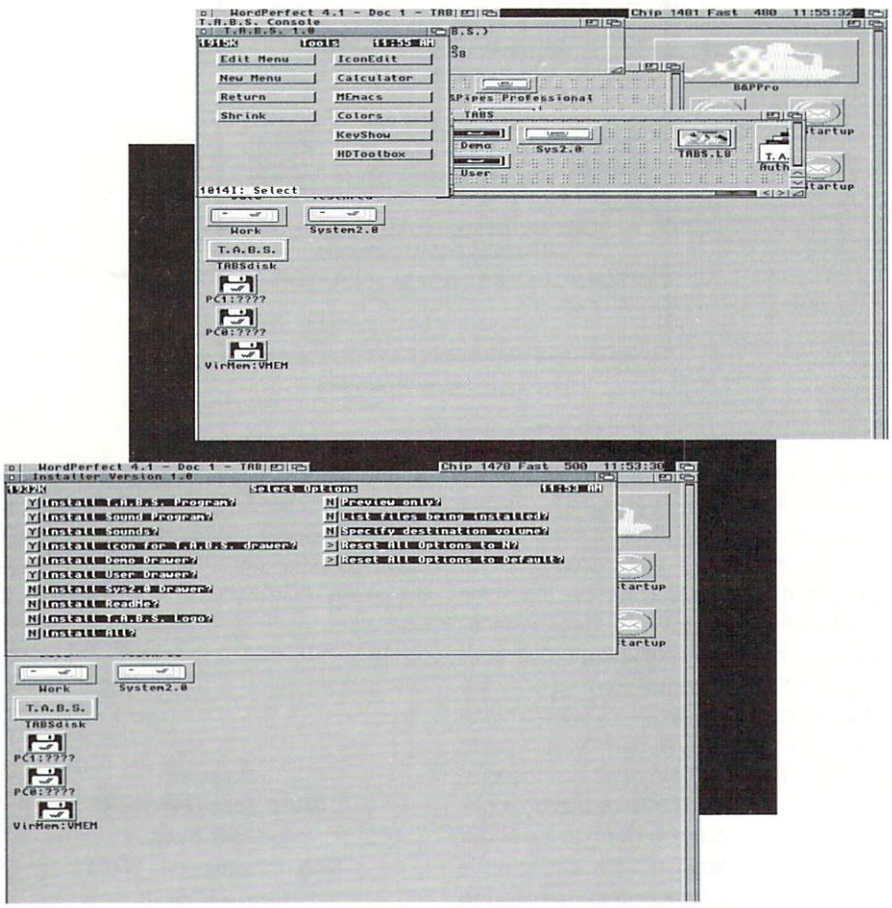
Please write to:
R. Shamms Mortier
c/o Amazing Computing
P.O. Box 2140
Fall River, MA 02722

T.A.B.S.

File Utility Software for the Amiga

by Rick Manasa

THE APPLICATION BASE SYSTEM, or T.A.B.S., is a file utility that lets you access any program on your system through a system of menus and buttons that you design. At that point you can launch the program with the click of a button. T.A.B.S. comes on one non-copy protected disk, is hard drive installable, and ARexx compatible. The program requires Workbench 1.3 or higher, and ARexx 1.10 or later to be previously installed and running. It will look for the More and Say com-



T.A.B.S. is a file utility that lets you access any program on your system through menus and buttons you design.

is described using the folders-in-the-filing-cabinet metaphor. Each file drawer is a disk and each folder is either a file or a directory holding other directories and files. You can create up to 35 tabs, or folder names in your root directory and 35 tabs for each of the root tabs and so on. The concept is one that should be familiar to most people by now.

mands in the Sys: Utilities directory, IconX in the c: directory and the rexxsyslib, rexxsupport, rexxarplib, screenshare and arplibraries in your libs: directory. The included InstallX-Libs program will put the necessary libraries in place for you. The other commands should be in the required directories if you're running 2.0. Otherwise, you'll have to check your system by hand, so to speak. It's too bad the people at Software Plus didn't think to make this part of the installation process more complete.

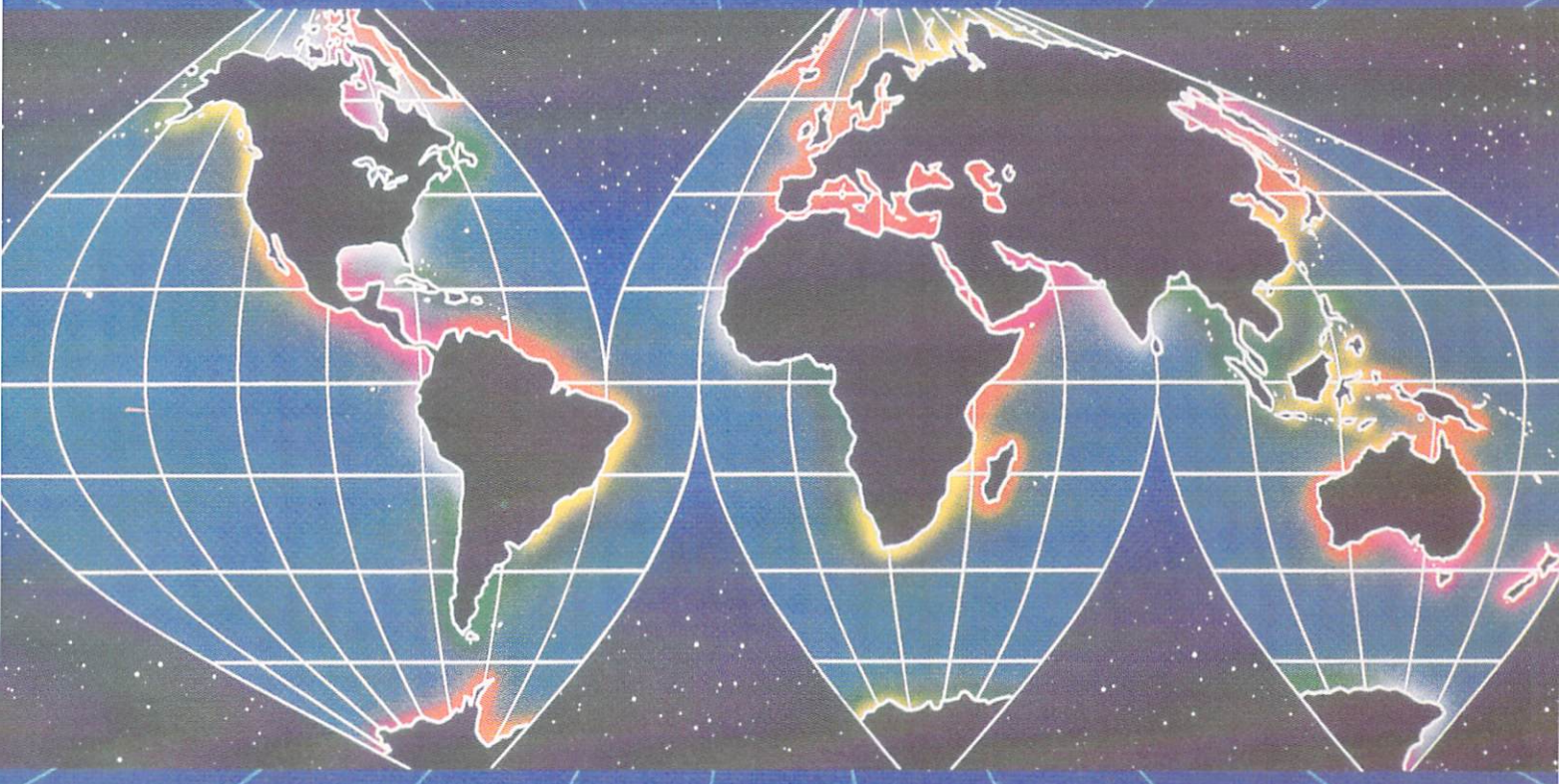
The main Installer program is very detailed. You are provided with many options for customizing T.A.B.S. to meet your preferences and needs. Like many aspects of the manual, the installation program can appear imposing. It's nice to have all the choices, but the presentation and implementation of the T.A.B.S. Installer program doesn't improve upon the standard Commodore Install program. I missed the Help feature of the Commodore Install program in particular. What is the User drawer, for example? How would I know if I wanted it installed or not? How important is the T.A.B.S. logo? Why does the Installer want to create an s: and a c: directory? Won't my standard ones do? None of these issues is addressed in the installation section of the manual, nor on the screen in the Installer program. It took me three or four tries to get T.A.B.S. installed properly.

Many programs refer you to your Amiga manuals for information on terminology and conventions. The T.A.B.S. manual takes a lot of time to go over this material for you. If you are new to the Amiga, this can save you some time and page flipping. Some more examples and graphics of possible actions from within T.A.B.S. would be even more helpful.

Setting up a menu of tabs is fairly straightforward. You can either edit an existing menu or create a completely new one. You'll be asked to enter a file name, either a new one or an existing one to edit. Once a menu is loaded, you can edit or create new tabs. This is done by editing or creating a tab name, entering a path, then typing in a tab's command and parameters. Once this is done a tab with your chosen name appears in the menu, ready to perform the command you've entered. Think of T.A.B.S. as a set of CLI commands in Workbench format. Press the button and your command is executed.

I managed to edit and create a few menu items without too much difficulty. I ended up laying the manual aside and dissecting a few of the examples to figure out how to do this. I found the manual made more sense after I'd stumbled around on my own. It's also possible to edit a set of tabs from a text editor. The manual outlines the special set of rules you must follow when creating tabs in this fashion. There are standard cut-and-paste features for reorganizing the layout of your menu window. T.A.B.S. provides hot key equivalents for just about everything. There are many different help files accessible from the

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different menus. These usually repeat information found in the manual. Once you get familiar with the T.A.B.S. system, you shouldn't have to open your manual again.

As stated earlier, T.A.B.S. lets you set up to 35 directories in the root and 35 more per sub directory, so you'll be able to create plenty of variations for different work environments. If you are working on a graphics project, for example, you could set up a T.A.B.S. menu with all your favorite graphics programs ready to go from one location. This can be helpful if you find it impossible to put all programs of a similar nature i? one directory on your hard drive. Since many programs like to be in their own drawers, T.A.B.S. can simplify access to them when it's time to move from one to the other. Finally, T.A.B.S. will iconify to keep your workbench tidy.

program. Consistency in terminology would also be appreciated. The Go Back button returns you to the main screen from the Command Help window, while the Return button does the same function from the Utilities screen. Why different names for the same button? There are a couple of alphanumeric displays that are not explained. One appears to be a system memory measurement, and the other a command file, though it's not clear what it is or why this may be important to the user. The Shrink function iconifies a menu window, but it doesn't expand it to full size. The window has no sizing gadget as well. You do have access to all the buttons but the message line at the bottom of the window is truncated. One has to wonder about the testing procedures at Software Plus. Some of these items should have been caught early on in development.

T.A.B.S. lets you set up to 35 directories in the root and 35 more per sub directory.

Complaints and Conclusions

You can tell someone took a lot of time trying to make T.A.B.S. simple to use yet comprehensive. I wouldn't call the effort an unqualified success, however. The instructions for starting and running the demo for T.A.B.S. are a bit confusing. While the opening section of the manual tells you to install the libraries before you run the program, you might believe this isn't necessary to run the demo. After all, the demo section is called "Trying T.A.B.S. Before Installation." However, you must install the libraries before starting either the program or the demo, or you'll get a Recoverable Alert and a guru. The manual requires you to jump around and hunt a bit to follow the demo ("Proceed to Part II ..."). This seems unnecessary. The appearance of the buttons in the demo could be more function specific. For example, the button that actually takes you back to the main menu (Go Back) looks exactly like the buttons that tell you something about the system. I hit the Go Back button expecting to be told something about a feature of T.A.B.S. called Go Back. I didn't expect to actually go back to the main menu. While this is explained in the manual, it could be presented a little more clearly in the actual

The manual is an odd combination of information overload and quirky organization of that information. In general, the manual has all the necessary information, but it could stand some better organization. There isn't a good flow from one section to another. There are over 25 pages of appendices, message codes, and the like at the end of the manual. The list is comprehensive, almost to the point of being excessive. I'm not sure the average user will appreciate or know how to use the amount of information provided.

Illogical organization of information sometimes occurs when the manual writer is very close to the product. It's easy to lose the "new user" perspective when you live with a program night and day from inception to marketing. Handing a fairly finished product to an outside manual writer is one way to avoid assuming and expecting too much from the first-time user.

I've yet to see the program that couldn't benefit by a timely presentation of its options and possibilities in tutorial format. While there are example run-throughs, they are buried in the interior of the manual instead of at the beginning where they could be of benefit. The T.A.B.S. manual is more of a reference work. This is helpful once you're up and running, but leaves the first learning steps up to you and the school of trial and error. It's not even clear how to start the program! The only icon I found that worked was the Sys2.0 icon in the Sys2.0 drawer, not the Authorized icon in the root or the User icon in the User drawer. None of this is stated anywhere in the manual.

The program is a tad sluggish, even on my A3000. It's hard to understand why an apparently simple utility program that doesn't obviously hog system resources (opening custom screens in interlace with 16 colors, for example) can't be quick about its business.

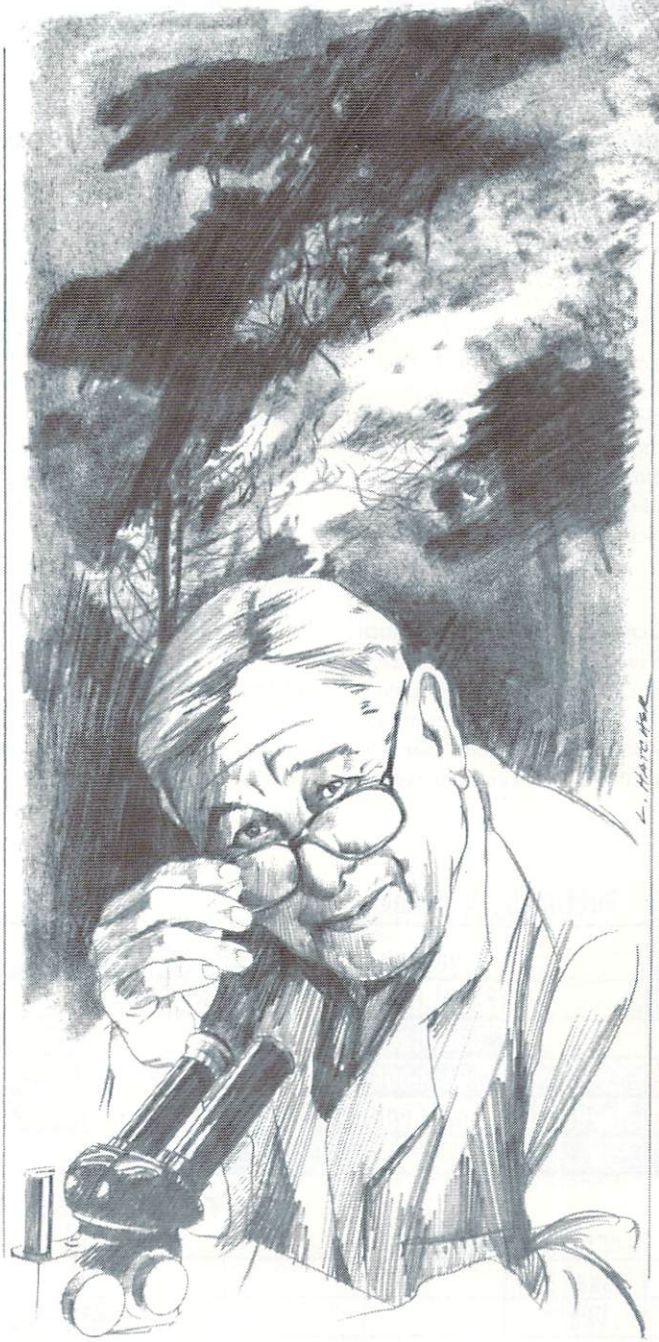
There is too much hindsight necessary to recommend T.A.B.S. without reservation. Far too often, things made sense only after I had figured them out for myself. *Tool Manager* and other PD/shareware programs provide similar functions for little or no money and with a lot less hassle. I've never been forced to ask myself why someone bothered to write a piece of software before, but I'm forced to ask myself now. What was the author thinking of when he placed T.A.B.S. on the market? It offers very few if any advantages over the standard Workbench. You still have to open drawers and click on icons to access and start programs. This product could very well have evolved out of a college course in programming, or perhaps an individual's personal exploration into programming on the Amiga. Letting others benefit from your experience is one of the cool things about owning a computer and an Amiga in particular. I think, however, I would have called Fred Fish rather than start my own company based on the T.A.B.S. product. It would really be better placed in the public domain as an example of programming and leave it at that.

The Application Base System (T.A.B.S.)
Software Plus
5254 Merrick Road
Massapequa, NY 11758
(516) 795-1400
Inquiry #207

1MB RAM, 2 floppies or a hard drive, Workbench1.3 or higher and ARexx

Please write to:
Rick Manasa
c/o Amazing Computing
P.O. Box 2140
Fall River, MA 02722

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Directory Opus 4.01

A review and tutorial by Merrill Callaway

BEFORE ITS U.S. DEBUT, I had been using a demo version of the original *Opus* downloaded from a BBS. I erased all my other directory utilities, judging them to be inferior by comparison. The USA release of Directory Opus by INOVAtronics became *the* essential program on my Amiga. It was a vast improvement to my already well-liked demo version, and I quickly formed the opinion that Directory Opus was just about perfect. After it had received a few minor upgrades, I became convinced that Directory Opus could not be improved. I was wrong. Directory Opus Version 4.01 is even better. It adds many new features and makes the configuration program easier without sacrificing backward compatibility with my DOpus V3.41 configfile.

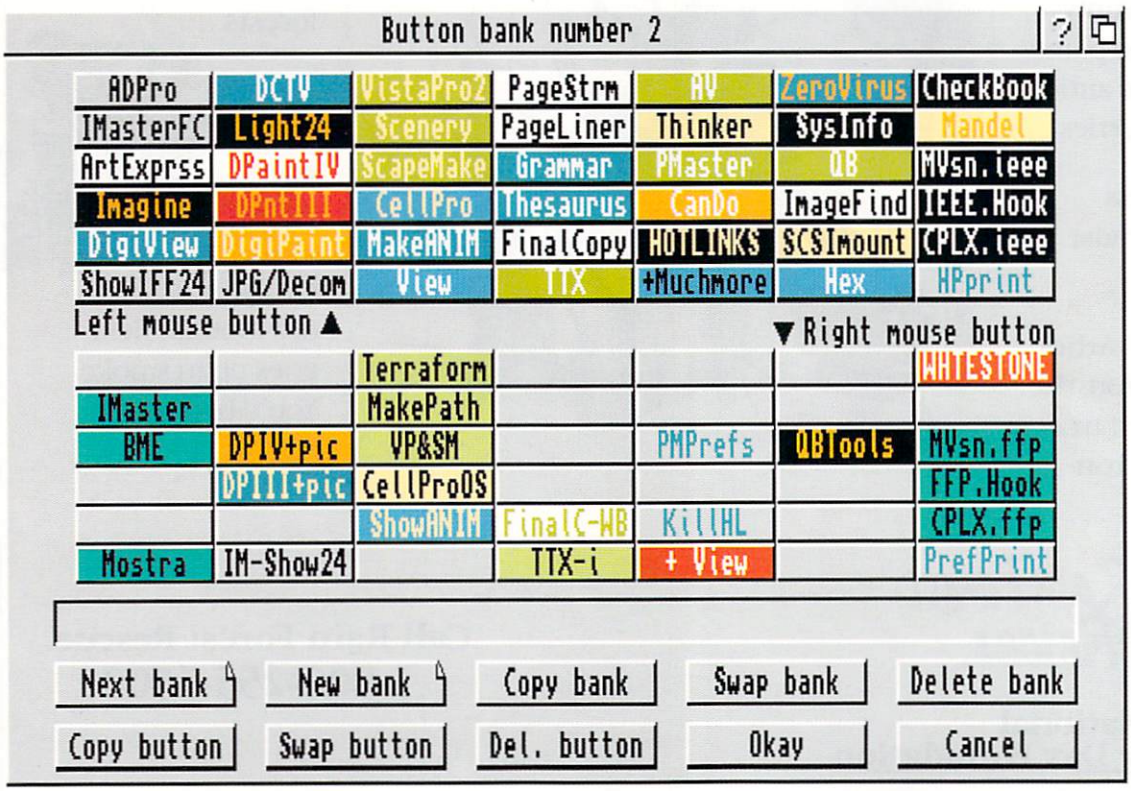
Overall Changes, Backward Compatibility, and Manual

Backward compatibility is good news for those of us who have a custom configured DOpus. The new DOpus will accept your old configuration and help files, from V3.4x, but *not* earlier, even though there is *no mention* of this in the manual! The only hint that you may use your old config file is in a readme file—without an icon!—on the disk.

There are major changes and improvements to the configuration interface, and several upgrades to the look and function of the DOpus screen. There are many welcome improvements to creating custom commands. The all-new 293-page manual is packaged in a handsome gray box with a matching slide-out D-ring binder. There are copious illustrations and a much clearer ARexx command section. There are more commands available in the new DOpus, but your old ARexx macros will work as written except possibly for the 'status' command used for 'config pointers'. Other sections: how the DOpusRT program starts external programs; a table of keyboard shortcuts; wildcard patterns; glossary; and sections on every option and feature. The index is pretty good, although I found omissions; for instance, the program DOpusRT was not indexed although there is a section on it.

Installation Woes

The installation procedure and documentation are flawed. The install script is incorrect and proper documentation about backward compatibility is missing. If you follow the installation procedure as is, it will delete your custom help file that you spent hours making! I



Directory Opus has undergone major changes to the configuration interface, upgrades to the look and function of the DOpus screen, and improvements to creating custom commands.

found several other undocumented problems with the install program. DOpus, once installed is wonderful, absolutely first class. But I doubt that Jonathan Potter wrote the Install script! In the interest of readers who may be having trouble, I've expanded this review to include a short tutorial on installing DOpus.

Fixing the Installation

To determine if your version has yet been fixed by INOVAtronics, run a 'pretend to install' with log and check it against this one. Here's the log generated by the Install program on my disk:

******* Installation Log *******
User Level: EXPERT:Pretend: Yes

>How do you want to install?
Ask Question: Result was "To your HardDrive".
>There seems to be a Directory Opus already installed in your drawer named "System2.0:Tools". Do you want the install Directory Opus† v4.01 over it?
Ask Question: Result was "Yes".
Delete file "S:DirectoryOpus.HLP"
Delete file "C:DOpusRT"
Delete file "Libs:Dopus.Library"
Copy file "DirectoryOpus" to "System2.0:Tools".
Copy file "DirectoryOpus.info" to "System2.0:Tools".
Copy file "c" to "System2.0:Tools".
Copy file "c.info" to "System2.0:Tools".
Copy file "libs" to "System2.0:Tools".
Copy file "libs.info" to "System2.0:Tools".
Copy file "Modules" to "System2.0:Tools".
Copy file "Modules.info" to "System2.0:Tools".
Copy file "s" to "System2.0:Tools".
Copy file "s.info" to "System2.0:Tools".

>What do you want to do when your machine starts up?
Ask Choice: User selected "Startup Directory Opus Iconified".
Writing to s:user-startup
========== start of file ==========
[All the rest of my user startup file was listed here.]
;BEGIN DOpus
ASSIGN DOpus: "System2.0:Tools"
RUN >Nil: <Nil: DOpus:DirectoryOpus -i
;END DOpus
========== end of file
==========
Exiting script...

Directory Opus is the finest directory utility on any platform. It is absolutely a must-have on the Amiga. Once you use DOpus, you will never want to do without.

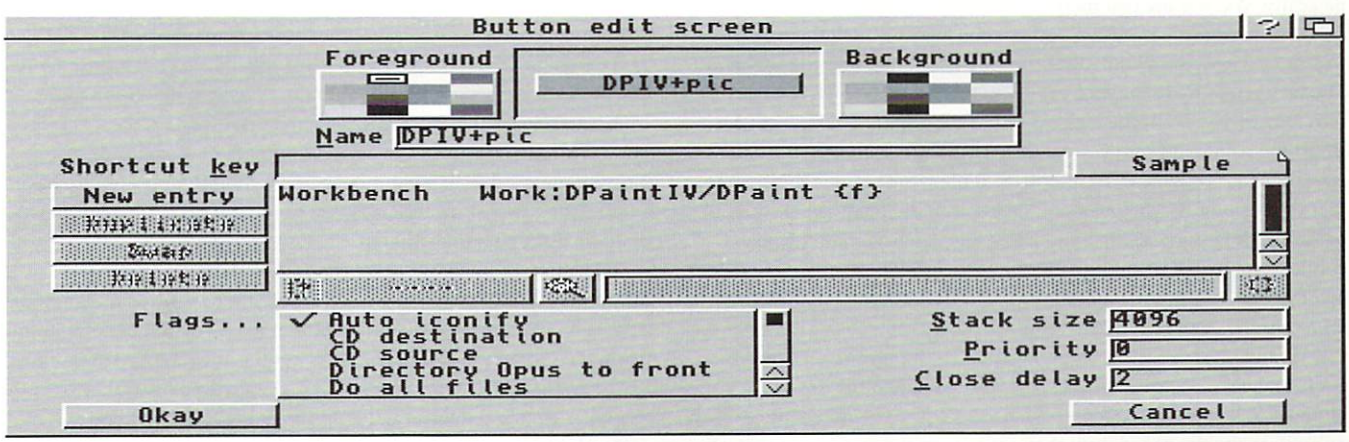
Notes

You *don't* want to erase your help file! Also, unless you install DOpus in the root of your sys: directory, the files in its C and Libs directories will not copy to the correct directories: i.e. your system:libs and your system:c directories.

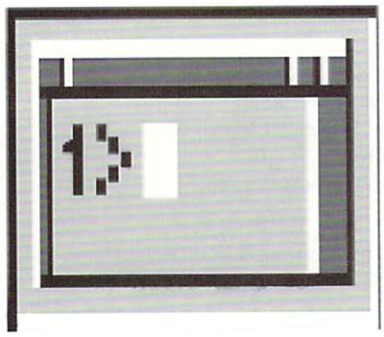
I suggest the following steps to install. Use your old DOpus with the new DOpus disk in your floppy drive. Do not run the install program. Make sure to back up all your old DOpus files beforehand, just in case! Also make a copy of the DOpus install disk as your working copy.

Auxiliary Programs, Libraries, and Help

1. Copy the new files in the DOpus disk C and Libs directory to



(continued on page 28)



cli directory

by Keith Cameron

In places where different people use the same computer, it sometimes becomes necessary to take steps to protect the work you do on a shared computer. As a middle school language teacher, I have four computers in my classroom being used by over 100 students each day. Since it is impossible to keep an eye on my machines at all times, I have found it necessary to take certain precautions to protect the data I have stored on them. Although my students, with the exception of one or two, would not intentionally sabotage my computers, I have learned during my 15 years of teaching that if something can go wrong, middle school students invariably will find a way to mess things up without really trying. That's where LOCK and PROTECT come into play.

LOCK and PROTECT are two cli commands located in the 'c' directory. They are similar in that they both exist to protect, but they are different in what they protect and how they do it. In essence, LOCK works with drives and diskettes while PROTECT works with files.

Let's begin with LOCK. First of all, here is the format for the command:

```
LOCK <drive> [ON|OFF] [<passkey>]
```

As you can see, it is not a very complicated command. Basically, you use the command in combination with the diskette, drive, or hard drive partition you wish to target. It will then lock that device just as if you had set the lock tab on the diskette by hand. The lock will remain in place until you reboot or the lock is removed. If you want the lock in effect on a permanent basis, just insert the command into your startup-sequence. (*NOTE* I use the term "startup-sequence" to refer to that file which issues commands to the computer when it is booted. Although the most recent version of AmigaDOS suggests that you make all changes to another file, I continue to use "startup-sequence" in a generic sense, referring to any file that you write to in order to alter the series of commands issued to the computer upon booting.)

In my work, I find it necessary to have the command set on a continual basis. I have written some tutorial programs in AmigaBASIC for my students to use. Leave it to them to bang around on the keyboard until they actually access the program itself. When they do so, they invariably insert characters into the program and then fumble around again until they save the changes. By having the lock command set, it is impossible for them to save these changes.

For those of you that feel the need to include a password for further protection, LOCK allows you to do so. A complete command line using a password would look something like this:

```
LOCK TUTORIALS: ON PASSWORD <RETURN>
```

In this example, I have chosen to lock the partition of my hard drive called "TUTORIALS" using a password. If no password is desired, just leave it off and use the three previous words (LOCK TUTORIALS: ON). To turn the lock off, substitute OFF for the word ON in the above example and you're in business. If you operate from a floppy system rather than a hard drive, just do the same thing and use the name of the floppy in place of the hard drive partition name above. If you boot from several floppies or you have a two-drive system, you might want to use the drive name rather than the diskette name, though.

The nice thing about using the LOCK command is that programs can still be used—they just can not be written to. If a drive is locked with a password and an attempt is made to open it without using the proper password, you will get this message: "Attempt to lock drive Tutorials failed." If you try to write to a drive that is locked, a system requester will appear saying that "Volume TUTORIALS is write protected."

As I said, PROTECT is similar to LOCK except that it deals with individual files rather than entire volumes or drives. To effectively use this command, you must first be familiar with the LIST command. I have covered this command in previous columns, so I will not deal with it again here. Anyway, all you need to know about this command is that, when executed, it will give you details about files in the specified directory (or the root directory if no other is specified). Below is a listing of the files in the root directory of one of my boot disks:

```
Fonts                Dir --rwed 06-Dec-92 11:34:04
Prefs                Dir --rwed 16-Jul-91 15:07:27
WBStartup            Dir --rwed 16-Jul-91 15:07:25
Libs                 Dir --rwed 26-Nov-92 08:51:26
Expansion            Dir --rwed 27-Nov-92 20:39:22
disk.info            388 --rwed 16-Jul-91 15:07:12
Expansion.info       632 ---rwd 16-Jul-91 15:07:24
Prefs.info          1144 ---rwd 16-Jul-91 15:07:24
Shell.info           722 ---rwd 16-Jul-91 15:07:24
System.info          632 ---rwd 16-Jul-91 15:07:24
Utilities.info       632 ---rwd 16-Jul-91 15:07:24
WBStartup.info       632 ---rwd 16-Jul-91 15:07:25
Monitors             Dir --rwed 16-Jul-91 15:07:15
Monitors.info        632 ---rwd 16-Jul-91 15:07:25
t                    Dir --rwed 25-Dec-92 10:51:41
System               Dir --rwed 29-Nov-92 12:19:51
Utilities            Dir --rwed 26-Nov-92 08:46:46
L                    Dir --rwed 16-Jul-91 15:06:49
S                    Dir --rwed 25-Dec-92 10:51:42
Devs                 Dir --rwed 27-Nov-92 11:48:18
C                    Dir --rwed 28-Nov-92 20:01:45
```

Most of the information displayed is probably familiar to most of you. What might not be obvious is the section that shows the letters "rwed" or "rw-d". These letters represent protection bits. Protection bits are attributes which, among other things, control operations concerning a file. Here is a listing of these attributes and the letters which represent them.

s script file
p pure command which can be made resident (see my column in the November 1992 issue)
a archived file
r file can be read
w file can be written to
e executable file
d file can be deleted

Most of these attributes are obvious, but let me explain a couple of them. If you do a list of the files in your 's' directory, you will find that several of them have the -s protection bit set. A script file is, of course, a file that contains a series of commands. In MS-DOS language, for those of you coming from that environment, you would associate a script file with a batch file. An archived file is a form of a backup file.

In order to set these protection bits, you need to use the PROTECT command. The format for the command is as follows:

```
PROTECT [FILE] <file|pattern> [FLAGS] [+|-] [<flags>]
[ADD|SUB] [ALL] [QUIET]
```

As you can see, there is a great deal more to this command than to LOCK. Don't be dismayed, though; it really is quite simple. The easiest way to use this command is simply to select the protection bits you want set and then use them in conjunction with the command, as follows.

```
PROTECT ARTICLE RE <RETURN>
```

This command line will set the 'r' and 'e' protection bits on a file named "ARTICLE." Thus, although it will be possible for anyone to read this file and execute it, it will not be possible to write to it or delete it. Referring to the format, one can see that the '+' and '-' signs can be used interchangeably with the arguments 'ADD' and 'SUB'. These arguments allow you to add or subtract protection bits. Simply indicate which bits you want to alter and follow them up with one of these arguments. Other protection bits will not be affected. Here is an example:

```
PROTECT ARTICLE WD SUB <RETURN>
```

To ensure that the file named "ARTICLE" can not be written to or deleted, I have subtracted those protection bits from it.

If you want to work on all the files in a directory, you can do something like this:

LOCK and Protect are two cli commands which give you an extra measure of security against data loss and unauthorized access.

```
PROTECT S:#? S ADD
```

This will make sure that the 's' protection bit is set on all script files in the 's' directory. You can also use the ALL option to do the same thing.

One advantage the LOCK command has over the PROTECT command is the use of a password. Anyone who has a little experience with the Amiga will find it easy enough to change protection bits. In essence, then, I really use the PROTECT command to protect me from myself and from accidentally erasing or altering a file. There are many more possibilities for using these commands than I have discussed here, but these examples illustrate the potential of these protective commands. Whether you need protection from your children, co-workers, students, or even yourself, LOCK and PROTECT should be able to help you.

•AC•

Please Write to:
Keith Cameron
c/o Amazing Computing
P.O. Box 2140
Fall River, MA 02722-2140

—Directory Opus *continued from page 25*

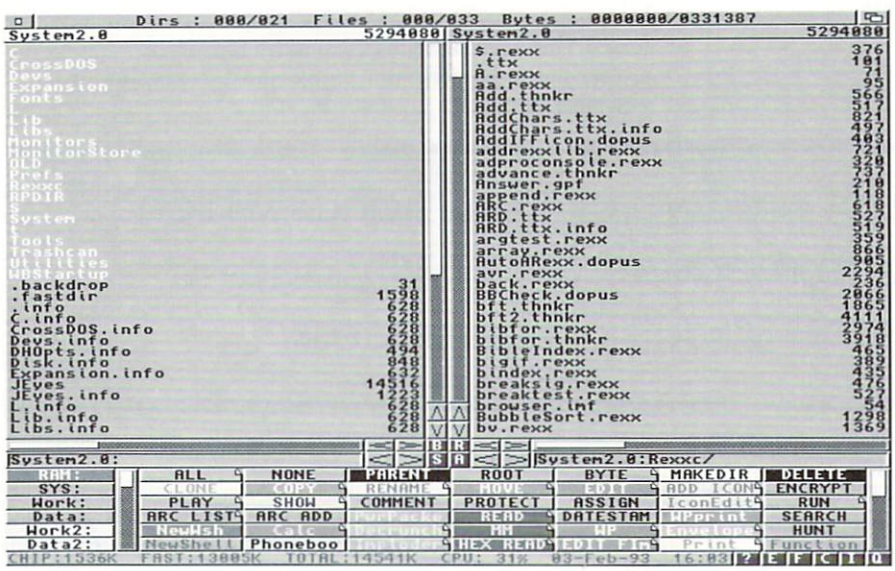
your sys:C and sys:Libs directories, replacing any older versions.
2. Open your ASCII editor and load the help file from the DOpus disk's S/DirectoryOPus.HLP.
3. Open a new ASCII editor window and load your old help file—same name from your S: directory. Find the place you started making your own help entries. Cut or copy from here to the end of the file.
4. Append (paste) your help entries to the end of the *new* DOpus help file.
5. Save the result to the DOpus install disk's S/DirectoryOpus.HLP file. Now copy all the DOpus disk's S/ directory files to your system's Sys:S directory.
6. Run the install program, but don't put a check by the C, Libs, or S entries during the installation. You have already installed them.
7. There is a TOOLTYPE of CONFIGFILE= and a command line flag -c each of which may be followed by the path/filename to your DirectoryOpus.CFG file. These insure that the config file will load and subsequently save from the path you give. The default look-up drawer—in the absence of the tooltype or the CLI flag—is the S: directory rather than the DOpus:Modules drawer as the manual states on page 9. Without a tooltype in the DOpus icon, the program loads S:DirectoryOpus.CFG at startup on my system.
8. The install script erased my necessary help file but left several relics of older installations behind! You may erase these relics, but the Sys:s directory *should* have the following files in it:

```
ConfigOpus.HLP [the Help file for the config program
screens]
DirectoryOpus.CFG [your version 3.4x config file]
DirectoryOpus.CLA [file classes used in file types]
DirectoryOpus.HLP [the one we edited to include the old
and the new]    [Any other custom config files you may
have saved previously]
```

On a brand new installation, DirectoryOpus.CFG will not appear until you save a configuration. Note that the Default DOpus config is built-in and doesn't have a DirectoryOpus.CFG file of its own.

Sorting Out the Screen Colors

When my new DOpus first came up, using my old config file, most of the DOpus window had disappeared! My old config did the colors wrong, although my customized features were present. For some reason all the lines and text colors went to gray, disappearing into the screen background instead of contrasting. If this happens to you, don't panic. You simply need to fix your screen colors. Find the menu or button for configure—it's there even if you can't see it—or run the config program separately from the Modules drawer, and open the Screen/Colors items. A facsimile of the DOpus window will come up (page 145). If nothing shows, click on the 3-D boxes button and change foreground and background to contrasting colors. You may or may not have to fiddle with the colors or number of colors to get the screen and text to show up properly. There are some color presets you may want to try as well under Screen/Palette, page 149. Apparently, the colors are implemented differently in the new version. This isn't a serious problem, but it's not documented at all, with respect to installation, an unfortunate omission in such an otherwise wonderful product. Until the installation is fixed, less experienced people will have several very justified gripes. Directory Opus is definitely the cat's pajamas. With better installation/compatibility documentation, and correct automation of the install procedure, DOpus will be just about perfect!



Directory opus 4.01 adds many new features and makes the configuration program easier without sacrificing compatibility!

Major Improvements

Directory Opus has dozens of useful features, too numerous to discuss here. Let's look at only a few changed features, and particularly those that are new. Naturally, all the features of the previous DOpus are present and operate much the same way. The Configure program changed the most, but it retains a familiar feel. The configuration program is more intuitive and WYSIWYG. You will not miss the old interface, and even though the new manual is better, you will find yourself looking into it less often than before, because the new interface is so friendly. Configuring buttons and menus is easier with on-line Config Help, a [?] button calls up help for the screen you are in.

→



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AppIcon Eliminates Typing

In the Command Editor (the heart of custom buttons or menus), choose any option and then switch to the WorkBench screen by pressing Left-Amiga-M. An AppIcon appears, prompting you to drop an icon into it. If you drop a tool icon into it, DOpus comes back, and there's the program with path already typed in for you on the command line! This is a great time saver: You don't have to remember the path to your program!

WorkBench Command Option

Two new options are WorkBench and Command in the Command Editor—in addition to the standard Batch (script); AmigaDOS, which replaces Executable; and ARexx. The WorkBench option will work with icon-driven programs that won't work from a CLI, as it reads the icon for everything including stack size. Also, you may open programs like *Deluxe Paint* with a picture file loaded, by using the WorkBench option and following it with an argument {f} to pick up the selected file in the active window. DPaint will not do this from a CLI, but it will under DOpus WorkBench option. The arguments such as {f}, to add the path and filename of the selected file, are all listed in a window when you click on the button marked {}. When you click on one of the arguments, it is inserted in the command line automatically.

Command, AmigaDOS, Batch, and ARexx Options

All the DOpus internal COMMANDS are available from a window as well. Click on the magnifying glass icon button to see a list. Click on one to insert into the current command line. Instead of the one line of input in the old editor, you may put in multiple lines. A different option on each line is OK, too.

AmigaDOS commands are available as if typed from a CLI. The magnifying glass button brings up a SYS: file requester. You may click on, say, a program from the C directory such as CD to change the current directory to a certain program's drawer before you launch the program, so that it can find all its auxiliary files without assign statements. Programs that run from a CLI are launched with the AmigaDOS option with or without arguments from the {} button.

The BATCH option lets you run a batch or script file. The magnifying glass button opens the S: directory as you would expect.

The ARexx button lets you launch any ARexx program and the magnifying glass of course opens the Rexxc directory.

Flags

You may insert flags, automatically as with the {} button, such as 'CD' to source or destination, 'Do All Files', 'AutoIconify', etc. New flags are 'Include DOpus-Startup', which will execute 'S:DOpus-Startup' before any external Commands are executed. This is an optional startup script you make for DOpus specific things. 'Include Shell-Startup' will execute the Shell-Startup so that you may have your resident commands, etc. available to custom commands with an output window. There are many more clearly explained features in the manual, for making custom commands. The flexibility to launch programs and control your system and DOpus itself is unparalleled.

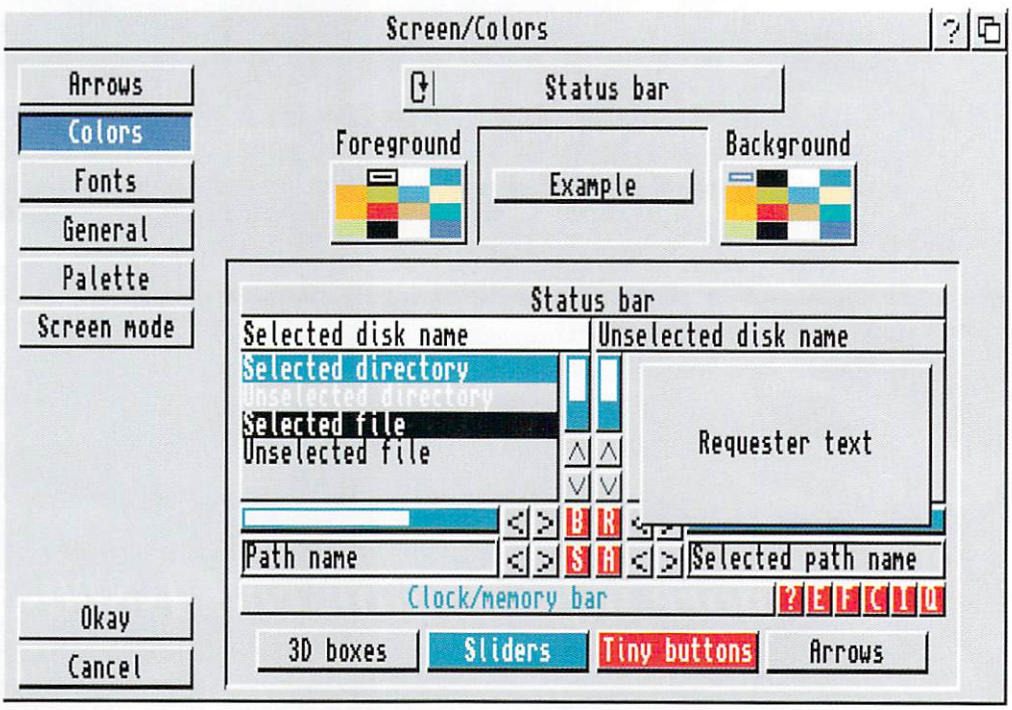
Selective Configuration

A powerful new feature is that you may selectively configure anything in DOpus by importing unlimited configs. Select only the sections you want to import: individual menu banks, or banks of buttons, certain file types, or an entire configuration. After I got my old config secure, I imported the default config to pick up the new buttons such as the 'sound player', the 'check fit', etc. A new bank of buttons was automatically added. If you use the menu import, have a *blank* menu bank before you import another one. Nothing happens if you have something in each of the five menu banks and try to import one of the default menu banks, something that the manual doesn't tell you. Copy the old items in a bank over to another bank temporarily to give you a blank bank for importing new menus.

You may have several working modes for DOpus, and import, say a button bank to control just a Video Toaster, or just your word processing, DTP or whatever without having a cluttered or large interface. You could even have a different color scheme for each configuration to remind you.

Fonts, Hotkeys

Version 4.01 lets you select different screen fonts provided they satisfy certain criteria. This is handy for those who need larger type. Global hotkeys operate from DOpus as commodities. These are configurable like any commands except that internal commands are not supported since these are global commodities. Whenever you configure hotkeys, there is a 'Sample' button to allow you to input hotkey information directly from the keyboard instead of looking up codes.



Customize your Directory Opus interface right down to the screen colors.

Drives

There are six additional drive buttons for a total of 30. They configure much the same as before, except for a new 'Get Drives' button, which loads up the first 30 assigned devices in your system. Drives, as well as all buttons and menus, may use hotkeys.

Filetypes

Unprecedented flexibility and power are contained in the ability of DOpus to recognize filetypes and file classes. Take launching a program for instance. A custom button may launch a program when you click on it. You may have selected a file in advance, and the program button was configured to take a selected file as an argument, so the program is launched with the file, as a project, loaded into the program when it launches. The filetypes and file class managers allow you to configure DOpus to recognize simple or complex patterns, headers or hunks in a FILE and perform some action such as launching a program when a particular event such as a double click on the FILE occurs. There are 12 events that you may assign to each file type. Each event can trigger a different action, but you don't need to assign all 12. As a simple example, suppose you put an extension '.fc' on all your *Final Copy* documents. You might create a file type 'FinalCopy' that checks to match '.fc' in the file name, and if true, to perform the following: 1) If the event is a Double Click, then Final Copy is launched with the file as a loaded document. 2) If the event is to Click-M-Click, then the file is copied to the destination window. We leave all the other events undefined. This is the simple way to do it, but what if you have Final Copy documents without the '.fc' qualifier? Can we obtain the same behavior? Yes, with file classes.

File Classes

In the Filetype window, you may choose to edit a File Class from the menu. With the File Class Editor, you may select from a number of preprogrammed File Classes including Final Copy files, *PageStream* files, IFF-24 files, and so on. These are sophisticated matches of file types using logic for reading/matching headers and hunks which are *always* present in that file class for positive identification *regardless* of the file name. You may then let this kind of matching determine the action to take if an event occurs. In our example, you can make the Filetype use a copy of the Final Copy File Class, so if you Double Click on *any* Final Copy document it will start Final Copy and load the file regardless of the name of the file. The file class editor has a neat file viewer to allow you to read in hex or decimal, find offsets from a particular byte and otherwise create or edit File Classes. File Classes are saved separately from Filetypes so that edits to file classes made into filetypes will not affect the originals. Many popular File Classes are included. You will probably find the ones you need, but they're relatively easy to make.

ARexx and Modules

Full ARexx support makes DOpus a powerhouse in your system. With ARexx and File Classes, you can customize *anything*! The ARexx section is much better documented with format, RC values, and Result variable outputs defined. They changed the host address from 'dopus_rexx' to DOPUS.1 (each copy has a number), and yet *failed to mention* the host address anywhere in the manual! I had to change all the references in my ARexx programs. Fortunately, with Search, I could find every string in my Rexx: directory that had 'dopus_rexx' and change it to DOPUS.1. I also found that the command 'GetString' no longer worked properly in my programs in the new version. My message strings were expressions composed of literals and symbol tokens and did not become proper messages as before. Putting a "" quoted quote "" at the beginning and end of the message string cured this glitch by insuring that the message always becomes one long quoted string. I certainly liked the old way better. I found yet another glitch in that the old config file, when imported, converted all my 'ARexx' option programs to 'AmigaDOS' options, so they wouldn't work until I changed this back. It took a while to get things settled down and running smoothly.

The Modules drawer contains DiskCopy, Format, Install, and DOpus_Print program icons. Format and Install use the same program, DOpus_Disk with different tooltypes specifying 'Operation'. These programs are buttons on the default DOpus window as well. The DOpus Format will format an IBM disk if you have system 2.1 or CrossDOS and the PCx: drive mounted. If you check 'FastFileSystem' and format an IBM PCx: drive, however, you will get neither an IBM nor an AmigaDOS disk. I did not verify the DOpus formatted IBM disk on an actual IBM. In any case, you may easily redefine to use the System format or diskcopy if you wish.

DOpus Interface

The new interface has four noticeable new features, which you may elect not to have. If a button has a Right Mouse Button (RMB) function, then a small 'dog ear' appears on the corner. You may elect to have drag bars beside the drive and the buttons banks (number of rows of buttons may also be selected). The center line dividing the source and destination windows is a hidden drag bar to make one window larger and one smaller. There are three keyboard shortcuts for left, center and right. There are close and front-back gadgets at the top of the screen (if you want). There are many subtle changes. Click-M-Click can now be Click-Drag as well, and the outermost window borders are parent (LMB) or root (RMB) gadgets. You may choose 'new look' sliders (white on gray), various screen resolutions and colors, and even the length of arrows. You may 'button iconify' leaving just the custom buttons on the WorkBench. If you don't like the way something looks, change it!

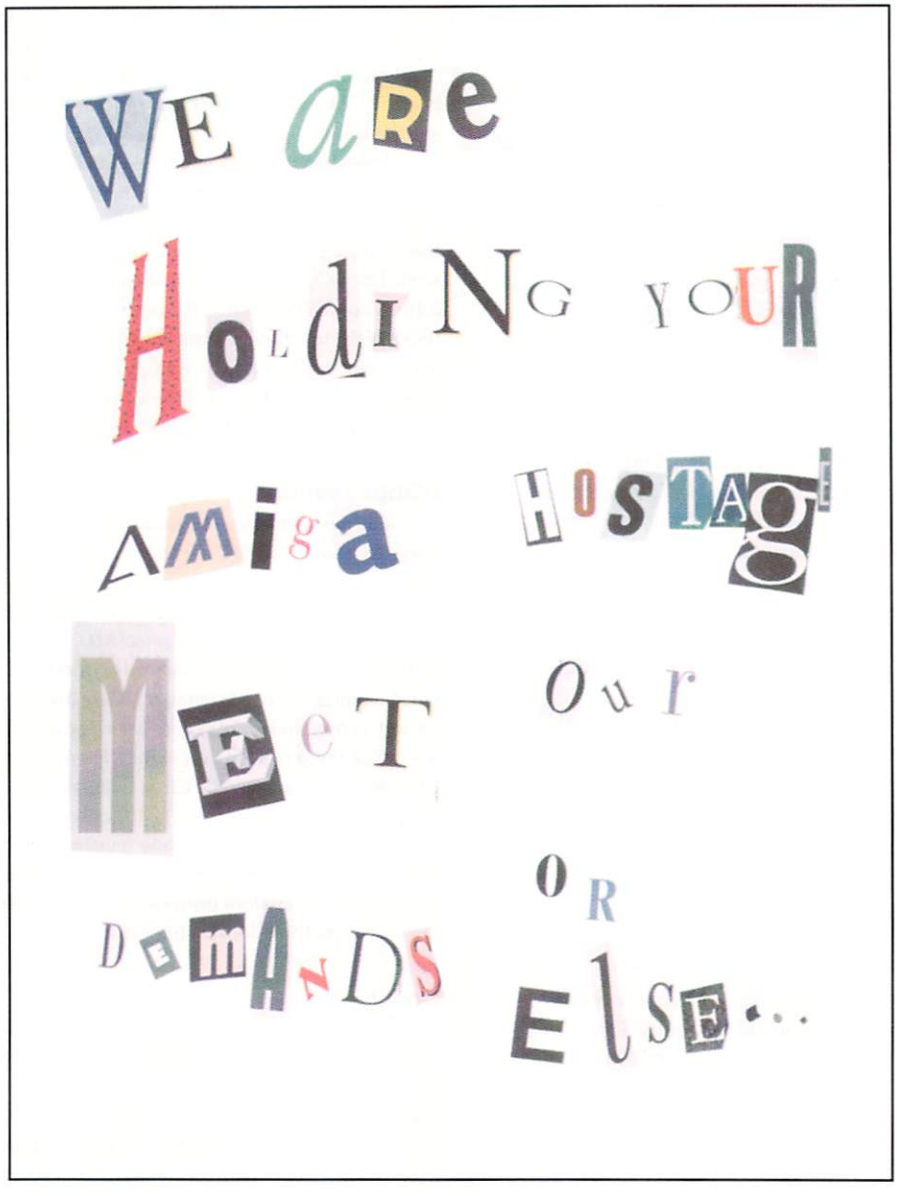
Conclusions

Despite the minor installation glitches, Directory Opus Version 4.01 is the finest directory utility on any platform. It is absolutely a must-have on the Amiga. DOpus, in a class by itself, has no serious competition. Once you use DOpus, you'll never want to do without. It's powerful, intuitive, stable, highly configurable, but immensely user-friendly, fun and easy to learn. The new version implements many worthwhile improvements without sacrificing backward compatibility. I recommend it wholeheartedly.

•AC•

Directory Opus v4.01
INOVAtronics, Inc.
8499 Greenville Ave.
Ste. 209B
Dallas, TX 75231
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Inquiry #200

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Bug Bytes

By John Steiner

•Fixes•Upgrades•

•Information•

•Technical Help•

In CompuServe E-Mail, I received a letter from a reader who comments, "I have an A3000-Rev 7.3 that has no problems running with a A3070 attached to the SCSI port. Whenever I attempt to attach a Toshiba CD-ROM device to either the SCSI port itself, or to the back of the A3070, the computer does not boot at all. At power up the hard disk light goes on and stays on; to my untrained eye it looks like a SCSI bus lockup. The address of the A3070 is at its default of 4, the computer is at its default of 7, and I tried the hard disk both at 6, and again after I changed the address to 2. The last SCSI device bit in the RDB's is set, and I tried it with and without the terminator plug in the back of the CD-ROM.

"As a test, I first backed up the hard disk for safety then connected the CD-ROM to a SCSI port on a running system. The instant I touch the cable to a port, the hard disk light goes on and stays on.

"The model of the CD-ROM is TXM3301E1 and the SCSI address is set at 5. This is a used drive, and I know the drive and cable work since I used it on a PC Clone. The documentation that came with the drive said it is SCSI-II and works with PC and MAC. Since it states MAC, it should be a full SCSI implementation."

If you have any suggestions to help this reader solve his SCUZZI problem, send them to me and I'll pass them along.

In another E-Mail letter, Dr. Marc Hairston of the Center for Space Sciences at the University of Texas at Dallas comments regarding the February 1993 "Bug Bytes" about connecting an Amiga to a VAX. He writes, "You mentioned Dr. Garavelli's using TSSnet and an ethernet card, but you didn't say anything about using a terminal emulator with that."

Dr. Hairston goes on to make several comments regarding his successful interconnection between the Amiga and the VAX. "I have an Amiga 3000 hooked up by an ethernet card and TSSnet to the VAXcluster here at the Center for Space Sciences, but I run the VLT (Valiant Little Terminal) program from Stanford Linear Accelerator terminal emulator with that. VLT is the best terminal emulator I've seen and since it's freeware, the price can't be beat. Anyone who gets a copy should write to SLAC and request the users manual for it so that he or she can get the full use out of the emulator.

"We use it here for making animated time-sequence presentations of our data. The VAXes have lots of number-crunching power, but even with high-end graphics packages (such as PVWAVE) you can't get a non-jerky way of presenting a series of plots. Even if you could, the only VAX to video box connection we've found runs at $12,000. So we generate the individual plots in color on the VAX, then download them, also in color, using the Tektronix 4105/4107 option to the Amiga and save them as IFF files. We then load the IFF files into *DPaint IV* and make an animation out of them. Then we plug in the VCR, make a tape of the animation running, pop out the tape and we're ready to fly off to a conference with a nicely animated presentation.

"While it's not *Silicon Graphics*, it's not bad either and it suits our purposes. So anyone who is trying to get a VAX and Amiga to talk to one another and do any kind of graphics transferring *needs* to have a copy of VLT. It's been a lifesaver for us."

Thanks for the comments. It's always nice to hear from professionals who appreciate the power of the Amiga and use it to its best advantage.

Norbert Bazin of Reutlingen, Germany, writes via electronic mail regarding the A3000 SCSI bus hang-ups mentioned in the February 1993 "Bug Bytes." He comments, that his SCSI bus hang-ups were solved by using Kickstart 37.175. Another possible solution for this hang-up should be setting MAXTRANSFER to a smaller value. He comments that he has not yet tested this solution on his own machine.

Allan Anderson writes about his new A1200: "I've been having some problems with programs that seem to automatically go into interlaced hi-res (640x400) with flicker despite my lovely new A1200's non-interlaced modes."

Unfortunately, if your older software opens a custom screen, and no provision was made for the user to specify the resolution or display mode, I don't believe there is much that can be done short of getting your software upgraded.

I might comment on is the fact that some software is designed to allow you to open on your choice of a custom screen or the Workbench screen. If you can modify your software to open on the Workbench screen, it will open in the same resolution that you have the Workbench set at. I can't provide specific instructions as to how to do this as it varies from one program to another.

One common practice is to place a command in the icon's Info (Information under Workbench 2.x) setup. Refer to your software manual to determine how to default to the Workbench screen.

David House of Indiana University writes with a problem regarding two emulator packages. He noticed the mention in the February '93 issue regarding problems in refurbished A2000 keyboards. He writes, "The problem I have on the A2000 is that the keyboard seems to ignore further input after loading Transformer, and SIS GO 64, emulator programs. I have tried them on other systems with no difficulties and I have tried different IBM & MS-DOS versions on the Transformer with no change in the failure."

I haven't heard of any problems such as this myself, but if you have a solution or any suggestions, send them to me and I'll pass them on. →

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David Schenken of St. John, MO, writes with more information on PostScript and comments about its implementation in several Amiga packages. He comments that PostScript is a simple language with extensions for graphics manipulation and little direct printer control.

There are, for example, no resolution control commands nor direct commands to discover it. One merely sends high-level commands and the program in the printer interprets it. If it works out, a page gets printed. He recommends the following books for PostScript users:

PostScript Language, Tutorial and Cookbook, Adobe Systems Inc., Addison-Wesley, Publisher; also known as the Blue Book.

Postscript Language Reference Manual, Addison-Wesley, Publisher; also known as the Red Book

Real World PostScript , Stephen F. Roth, Editor; Addison-Wesley, Publisher; also known as the Orange Book

Mr. Schenken notes that simply reading the PostScript program output generated by the publishing program and using book number 2 as a reference will provide insight into most problems. Reference number 1 is a little easier reading, but is not quite as comprehensive. PostScript files are, in general, plain text files. He identified three troublespots regarding PostScript printing problems. 1. Some printers deal with unavailable typefaces by quitting. 2. Some paths end up too long and the printer quits quietly. 3. There is some error that does not ordinarily appear.

Mr. Schenken also comments on the PostScript problems covered in the July 1992 "Bug Bytes" reported by Tom Schwartz. He notes that Gold Disk may have some set-up bug. "If there were severe errors (in 49.3) as represented to you by Mr. Laitar, the Gold Disk rep, the problem would show up on every page as, for the printer, there was only one first page (when it was a virgin printer). I also believe that Gold Disk could be legitimately perplexed. PostScript is not as deterministic as other languages, mostly because it tries to do so much work on the behalf of the user."

He also comments about the letter from Scott Carr and his use of *Final Copy*. Mr. Schenken suggests viewing the file on the Sun system using VI. "I have found that *FC* sends some control characters, which I just eliminate. If a simple elimination of control characters fails to improve the situation, send something really small—he is using the PostScript fonts, isn't he?—and comment out all the lines except the first (%!PS-Adobe, or some such) and the most important (showpage) using a '%' in the first character position on each line. If that fails to produce a page, the lines:

```
%!
showpage
```

are all that are needed to eject a page from even the most determined PostScript printer."

Mr. Schenken also writes with some problems regarding the Supra modem with GPFax software. I've gotten a couple of other bug reports regarding this combination and at this writing I'm working on getting more details about the problems reported. I'll have more on these modems in a future "Bug Bytes".

Joseph Gill of Wichita Falls, TX, sent a fax with a report of an error in the AMOS version 1.34 manual. The problem concerns the effect of the RANDOMIZE statement upon the RND() function.

He writes, "The manual states that the RANDOMIZE sets the 'seed' from which the RND() function generates its pseudo-random sequence. Accordingly, a programmer should be able to consistently generate the same sequence of pseudo-random numbers just by providing the same seed at each execution. In other words, the following code should print the same five (pseudo-random) numbers every time it is run:

```
RANDOMIZE 102
FOR CTR = 1 TO 5
    PRINT RND(3)
NEXT CTR
```

"Unfortunately, every time this sequence is run, AMOS produces an entirely different sequence of numbers."

"The trick seems to be with the RND() function. The manual states the RND(n) will return a value between 0 and n, if n is positive. If n equals zero, the function will return the last number it returned. What it doesn't say is that if n is negative, AMOS will return a value between zero and the absolute value of n, based on the seed. Following this rule, this program works:

```
RANDOMIZE 102
FOR CTR = 1 TO 5
    PRINT RND(-3)
NEXT CTR
```

"The RND(-3) still returns a value between zero and (positive) three, and repeatedly running it, produces the same sequence, as it should."

Kevin Davidson writes with a note regarding an update to *Art Expression*. "Soft-Logik started shipping version 1.02 of Art Expression on February 4. This release has some corrections for printing through the preferences drivers. This update will be shipped automatically and free of charge to all registered Art Expression users." If you haven't registered your software, you should do so to take advantage of this upgrade.

That's all for this month. If you have any workarounds or bugs to report, or if you know of any upgrades to commercial software, you may notify me by writing to:

John Steiner
c/o Amazing Computing
Box 2140
Fall River, MA 02722

or leave E-Mail to
John Steiner on Portal
73075,1735 on CompuServe
Internet mail can be sent to
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Doin' it with CanDo!

by Jeff Gamble

What Is CanDo?

CanDo is a unique authoring system from INOVAtronics. It helps you to create custom applications easily using a card-and-deck method combined with standard scripting commands. CanDo enjoys the potential to become a widely used method for program design and development. The power of the program is limited only by the user's imagination. CanDo provides a simple way to create extensive applications, along with a very useful manual to get users started. This tutorial will take that manual one step further.

What Do We Do?

We will create a simple application to act as an interface for launching other programs. By creating this application, we will learn how to perform important processes in CanDo: how to set up a CanDo window and how to program buttons. We will learn about CanDo Decks and how to launch a program with our application. We will also design our own interface screens and title screens.

Custom Screens

The first screen is the introduction screen that runs when the application is launched. It should bear the name of our application. For the purposes of this article, we will call the program "Launcher." The second screen will be the main interface screen—home to the buttons that will launch the subprograms. Use your imagination in its design but be sure to allow room for all the necessary buttons. I used *DeluxePaint IV* to create the two screens. These should be saved as standard IFF images at the screen size you will be using. I used lo-res 320 x 200 with a palette of 32 colors to keep the memory requirements to a minimum.

The Deck

Open a new CanDo deck. Add one card to your new deck so that the deck consists of two cards. Save the deck as "Launcher." Now that your basic deck has been created, we will load the custom screens into the CanDo deck as windows.

GOTO the first card in the deck. Open the window editor. Click on the Dimension button. The Dimension Screen will appear. Click on the "Unnamed" button at the picture



Custom applications are just minutes away with the CanDo authoring system

Custom screens such as this sample title screen can be created in your favotite paint package and imported into your CanDo application.

requester. This will bring up a file requester asking you to choose a picture. Select the picture you wish to load and click OK. For the first card, we will load the picture that will become our title screen.

Exit the dimension requester; this will return you to the window editor. Click on the Objects button; this will bring up the object requester. Here you can add elements to your window such as a close gadget, window to back gadget, etc. For the first screen, you don't want any objects. Also, you must remove the name of the window from the Window title gadget; otherwise, an awkward title bar will appear on your window.

Click on the Options button. All the options are set to a default. You want to change only the first option so that the window's borders are invisible. Exit the window editor; this will return you to the CanDo main panel. The picture you just dropped in should appear as the window on Card_1.

Turn to Card_2 and load the second picture as a window. This time, you will want to add a close gadget to your window. This will allow you to exit the launcher program. In a future article, we will add menu items to the second card to bring more functionality to the program. The close gadget will be the only step done differently when adding this window. When you are done, return to the CanDo main panel and turn back to Card_1.



Above, the second card in our deck. This card will be our main interface screen. Below, the Timer Object Editor lets us set objects in our deck to timers. This lets us have our first card turn automatically. It can be used to time just about anything we wish to put in our deck.

Timer

Now add a timer to the first card. The timer will flip the card automatically when the deck is run.

Click on the timer icon. The Timer Object System window appears. Click on Add. A second window appears with the name of the timer you are going to add and edit. We want an interval timer that waits 15 seconds before flipping to the next card. Click on the check box for interval timer and set the timer for 15 seconds.

When the 15-second timer expires, we need to have the card do something. We want to have the card turn to the next card in our deck. For this we have to add a script which instructs Card_1. Click on the "Occurred" button in the script requester on the Timer Object Editor screen. This will bring up the script editor.

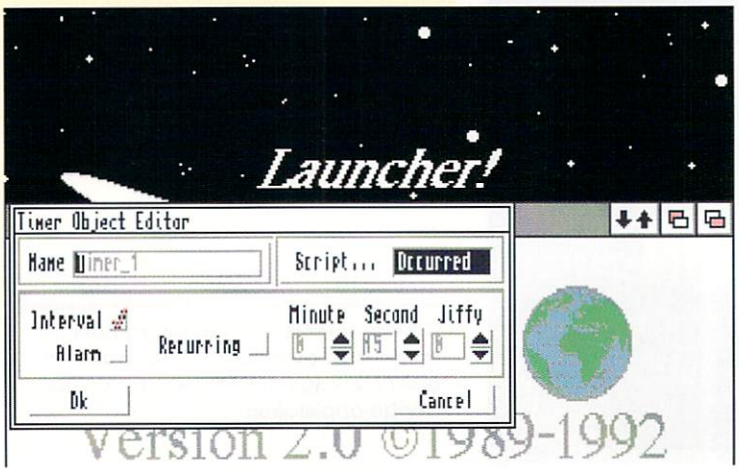
The timer is set up so that whatever instructions you give to the card will happen only after the 15-second clock expires. The event that takes place will be "Occurred," in other words, the timer's instructions will have occurred and now it is time for the results of that event. As a result of the timer having "occurred," Card_1 will turn to Card_2 in the deck. For this to happen, we must add a GOTO command. We want to GOTO another card in our deck.

Click on the deck icon in the tool bar to the right of the editor. This will bring up the card finder. Select the card you wish to GOTO. In this case, it is Card_2. Click on "Insert a GOTO this card." A line will be added to the script with the GOTO command. That simple line of code is all that is needed to turn the cards.

Click on OK; this will bring you back to the Timer Object Editor. Click OK on this screen and then on EXIT. You should now be back to the CanDo main panel, displaying Card_1.

Card_2

Card one is actually complete. There is no need to add anything else to it at this point. We will now turn to Card_2. Your screen for Card_2 should have the following: a close gadget; a menu bar attached to the close gadget; four "buttons" that were drawn on to the screen to be "activated" later.



Adding the Buttons

When I created my screen for Card_2, I drew four boxes to indicate where the buttons would be located and I typed in names for those buttons. I chose to launch four programs that I use on a daily basis: *ProWrite*, *SCALA*, CanDo, and *PageStream*. I chose to do the boxes and place the text before coming into CanDo. We will now add our buttons to Card_2.

Click on ADD on the main panel. You will be asked to size the button to be placed. Make it the same size as the area you have left for each button. The button edit screen will pop up. We want an AREA button with invisible borders and we want it to be a toggle button.

The function of each button will be to launch an independent program. There are four options for us to choose from that will determine the type of script we must use for our

button: Click, Release, Drag, and Double Click. Each represents a different method of activating our button. Choose "Release" from the script requester. The "Release" script will only activate a button after the mouse button has been released. That way we can move the pointer off the button and release if we want to change our mind about launching the button we were clicking on. "Release" becomes the "Event" for our button. As a result of the "Event," we want the button to launch one of our programs.

On the Script Editor tool bar, scroll down to the DOS icon and click on it. This will bring up the Start Application Requester. Choose the application you wish to start and click OK. CanDo adds the proper commands as well as the file and path names to the script. Click OK and return to the button editor. Click OK there and return to the main panel. Save.

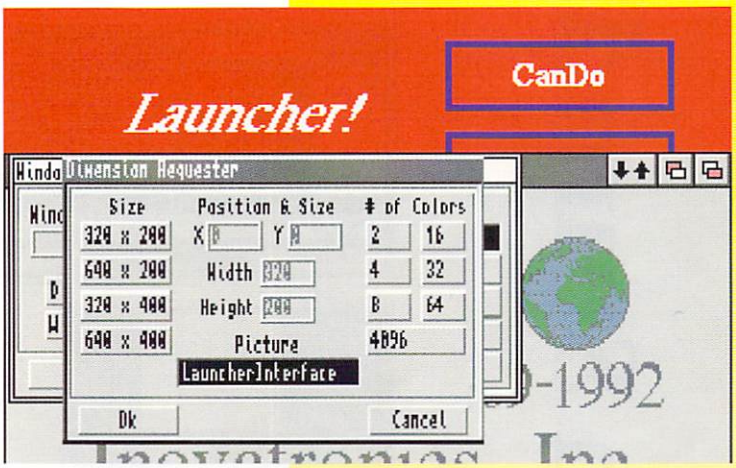
Test the Button.

Make sure you have saved your work so far. Click on the BROWSE button on the main panel. This will allow you to test the functions in your deck. Click on the button you just created. The application should launch. If it does not launch, try redoing the script for the button. It is possible that the directory or path may have gotten confused. Prepare the remaining three buttons the same way as the first.

Test the Deck.

After completing the buttons for Card_2, save your work and exit CanDo. Find the icon for your deck; double-click on it to launch it. Card_1 should come up for 15 seconds as planned, then turn to Card_2.

Open and close the applications you have assigned to the buttons on your interface panel. Each time an application launched with "Launcher" is closed, it should return you to the interface panel. Close "Launcher" by clicking the close gadget. Reopen CanDo and load the "Launcher" deck for some final adjustments.



Final adjustments

If you run into any problems with the deck, or if you wish to change any of the programs launched, do it now. You are now ready to finish your application. There are three things you CanDo with your deck now: you can leave it as a deck, you can bind it with the multi-binder to create a stand-alone application, or you could bind it with the Binder to create an application that requires the CanDo library to run.

Since the deck is so small, it is not necessary to bind it. The deck doesn't have to search for many files to run and as long as everything is kept where your scripts say it is; the deck will run just fine. Also, keeping the application a CanDo deck makes for easier updating, changing, and problem solving.

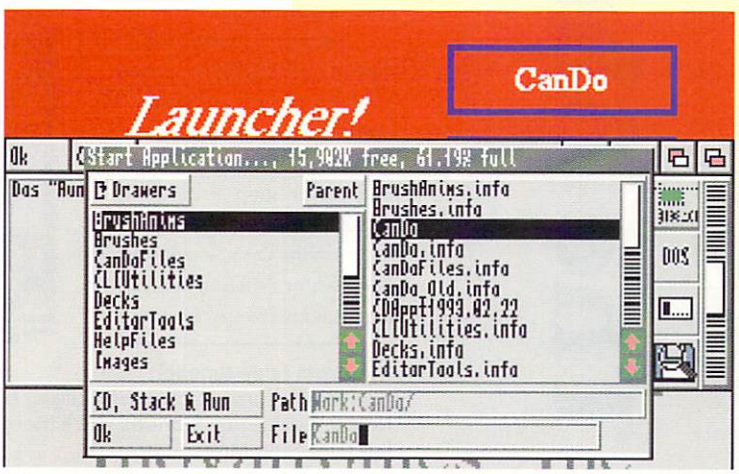
It is very important to note that you must keep applications where your script says they will be. The program will not launch an application if it can not find it. This presents another advantage to keeping the Launcher in the form of a deck. If you decide to move an application to another drawer or partition, or you rename any element of its path, you can easily go in and make the necessary adjustments using CanDo. A bound deck cannot be edited.

Above, the Window Dimension Requester. Here, we specify the size, position, and number of colors for a window. We can also load in an image to be used as a background screen. Below, the Start Application Requester is where we link the buttons to their applications.

Conclusion

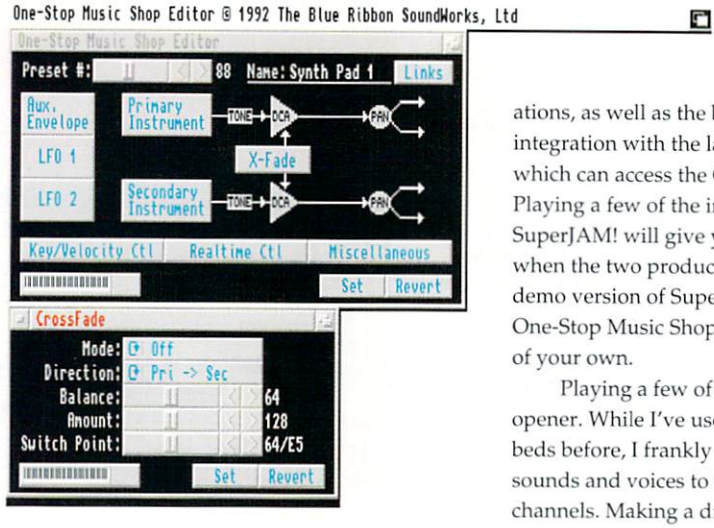
CanDo is a versatile and easy to use application maker. We were able to create a custom interface for our application in a matter of a few minutes. In less than an hour of working with CanDo, we designed and programmed a useful application. What you have created, basically, is a scaled down version of a directory utility. It is possible to make this initial program do a great deal more. In the next installment, we will add more features and expand on our "Launcher."

•AC•



The Blue Ribbon SoundWorks'

One-Stop

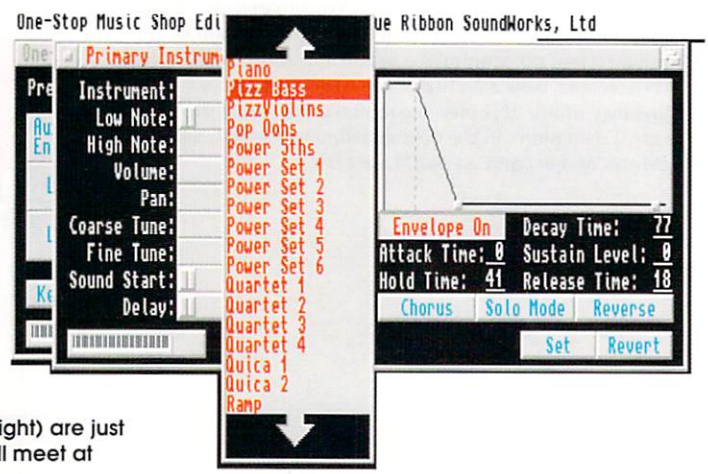


IN THE FEBRUARY ISSUE we got a sneak peek of the *One-Stop Music Shop*, a hardware sound card that will produce 16-bit CD quality sound from your Amiga. The One-Stop Music Shop, based on the E-Mu Proteus sound engine, adheres to the General MIDI standard and the multi-media PC specification. The included Loopback program allows non-Blue Ribbon products to access the One-Stop Music Shop as well. Combined, these features make for greater compatibility across the Amiga sequencer line and across computer platforms. Music written using the One-Stop Music Shop will be playable on other systems with a minimum of tweaking required.

Many of the basics of the One-Stop Music Shop system were covered in the February article, so refer to that for a general overview of the One-Stop Music Shop (Price: $649) and its features. This review will focus on the One-Stop Music Shop editor, MIDI file Player, and other software considerations, as well as the board's application and integration with the latest version of *SuperJAM!*, which can access the One-Stop Music Shop directly. Playing a few of the included demos created with SuperJAM! will give you a taste of what can be done when the two products are working together. A demo version of SuperJAM! is included with the One-Stop Music Shop so you can create some music of your own.

Playing a few of the demos was a real eye opener. While I've used SuperJAM! to create musical beds before, I frankly found it a chore to assign sounds and voices to the proper synths and MIDI channels. Making a drum map to match the note numbers on my Proteus was a nightmare. Trying to get SuperJAM! to load all of my settings at startup was next to impossible. None of this is an issue with the One-Stop Music Shop. Everything is preset and ready to go. This is great for knocking off a fairly complete orchestration without a lot of bother. I can always save my composition as a MIDI file and reassign patches later in *Bars & Pipes* to match the synths and sounds in my rack. There's more on SuperJAM! and the changes it's gone through later in this issue.

The One-Stop Music Shop comes on one non-copy protected disk and is hard-drive installable. I was surprised that Blue Ribbon decided to leave the



The Cross Fade function (top) and the Instrument Requester (right) are just two of the friendly features you'll meet at the One-Stop Music Shop.

Music Shop

by Rick Manasa

software installation up to the user instead of including an install program. While it isn't a big deal to drag the icons to the appropriate drawers, it doesn't seem to present any advantages over the Commodore Install program. Many people, like me, prefer a work environment without drawers full of icons that don't do anything, like the icons in the Tool and Accessory drawers. I also suspect there are still lots of people who may be musical wizards, but who could still use a hand installing their software. I had to run *DiskMaster* and hunt around the One-Stop Music Shop disk for files to copy and appropriate places to put them—not all the files had icons. This took way too much time and provided no degree of certainty that I'd done it completely and correctly. Even a simple ReadMe file would have been more helpful—all in all, not what we've come to expect from Blue Ribbon.

The One-Stop Music Shop editor will operate as an Accessory in Bars & Pipes Professional and SuperJAM! or as a stand-alone patch editor. Those familiar with the architecture of the E-Mu Proteus will be right at home. While the editor for the One-Stop Music Shop may have slightly different appearance and layout than whatever editor you may be using, the functions and features are the same. As with any comprehensive piece of software, the editor can look formidable at first, but if you take it a step at a time, you'll be a Sonic Commander in short order.

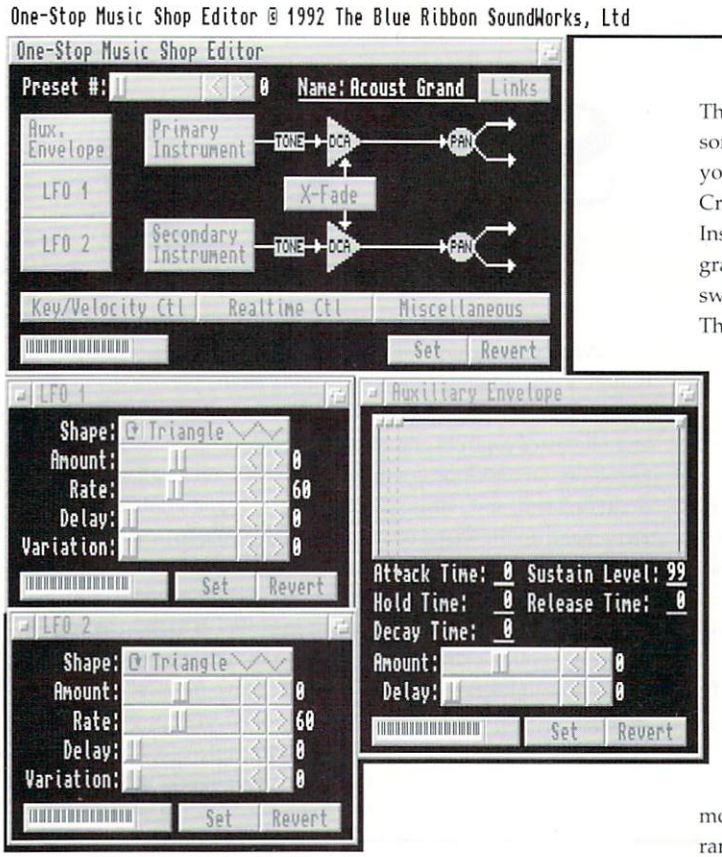
The delight in using the One-Stop Music Shop is the way it works with all the Blue Ribbon software. It makes SuperJAM! a joy to use. It means you won't have to bring your synth rack home from the gig to compose or arrange more music.

Flow Charts and Buttons

The opening screen displays a window with some basic information about the first patch. The window displays a small flow chart of how a sound is created plus a dozen or so buttons that open windows of their own to more controls. In its simplest form, a Preset on the One-Stop Music Shop is made up of a sampled sound, called an Instrument, that is amplified through a DCA (Digital Control Amplifier) then Panned to one of the stereo outputs. All the other controls allow you to change characteristics of the sound, levels of amplification, and pan position. Some Presets are made up of two Instruments, while others use only one. The controls available to the Primary and the Secondary Instrument are identical. Here's how the controls break down.

When you click on the Primary or Secondary Instrument button, a new window opens presenting all the parameters of the Instrument. Some are buttons that toggle or select, some are sliders, and one set of controls graphically represents the Instrument's envelope. An envelope is a description of a sound's attack, hold, decay, sustain, and release characteristics. Together, these parameters make up the shape of an Instrument's sound, or how the sound behaves over time. For example, a piano has a quick or short attack time. When you hit a piano key, the sound starts immediately. It will decay over a period of time and stop almost as soon as you lift your finger off the keyboard. A tuba, on the other hand, has a longer attack time. It takes a while for the air to move through all the tubing in a tuba—and no small amount of effort to push it along! It's possible to sustain a tuba's note at the same intensity for a while, depending upon how much wind you can deliver consistently. A tuba's sound hangs on a bit after you finish blowing, as do most acoustic instruments. A good understanding of a traditional instrument's envelope can be a tremendous help when attempting to emulate that sound electronically. It can also help you modify existing instruments in wild and wonderful ways as well. As you move the envelope control points, values increment, and decrement in the text area. You can also enter values directly into the text area. The graph will adjust accordingly.

The other controls in the Instrument window are very easy to understand. You can change the Instrument, the range of notes that can be played, the Volume and Pan position, and the Coarse and Fine Tuning. You can also determine the point within the sample that the Instrument will begin to play (Sound Start) as well as how much time will pass before the sample starts playing (Delay). There is a miniature keyboard in the lower left corner that will play a note of the sample, with the pitch dependent on where you place your mouse on the icon before clicking. The remaining controls toggle Chorusing, the Solo mode and the Reverse mode. Chorusing plays two notes instead of one at a time, with one note slightly detuned from the other. This helps to fatten up a preset by introducing more motion into the sound as it plays. Solo mode will put the particular Instrument into a monophonic mode. This means you can play only



one note at a time, as opposed to the default polyphonic mode, which allows you to play chords and other multi- note groupings. Reverse mode starts the sample from the end and plays it to the beginning. I've added a reverse cymbal to my stock drum kit to simulate mallet rolls on a cymbal. The Set and Revert buttons work together, providing a kind of Undo function. If you make changes to an Instrument, but never hit the Set button, Revert acts as an Undo button, returning the instrument to its original settings. If you use the Set button as you go along in your editing, Revert will move you back to the previous Set edit that you've made. There is only one level of this type of undoing available. Hitting the Revert button repeatedly will not toggle between the two most recent settings.

CrossFade and CrossSwitch

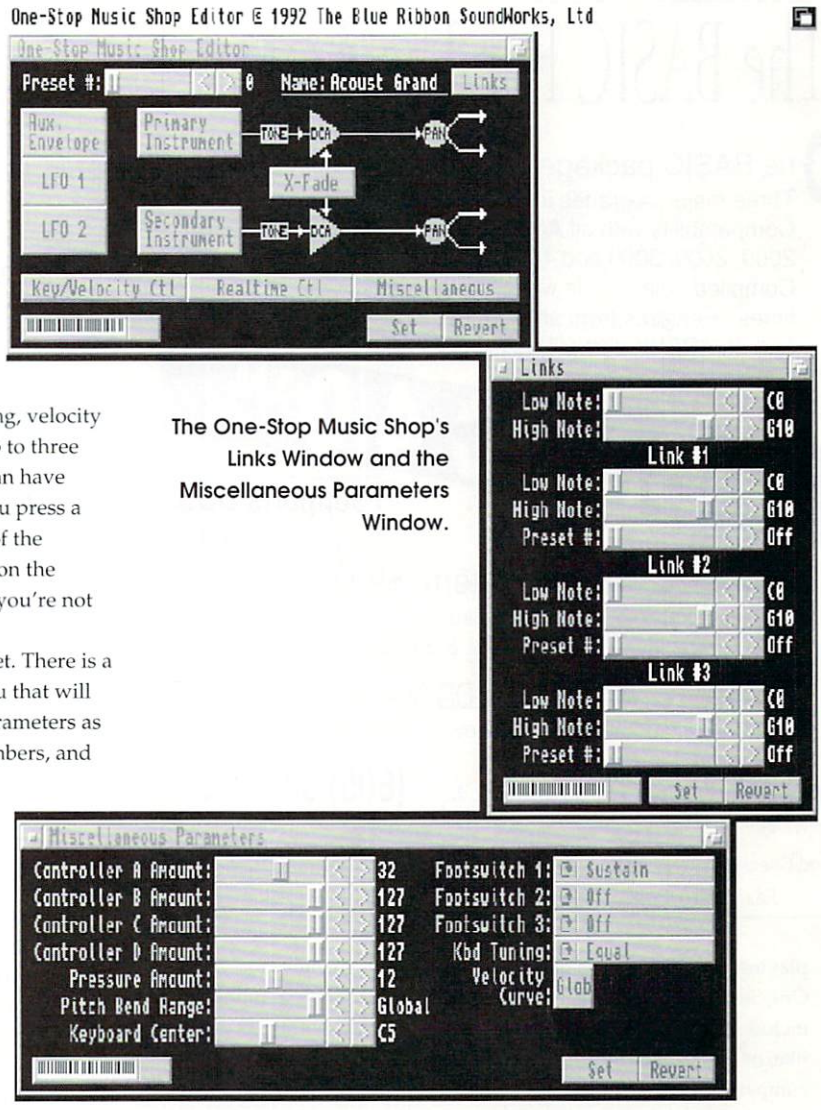
The Secondary Instrument window is identical to the Primary Instrument window. The ability to mix and blend two Instruments greatly increases the sonic palette of the One-Stop Music Shop. One of the many things you can do with two Instruments is CrossFade between them. The CrossFade controls let you change the balance between the two Instruments of a patch in a variety of ways. The change can be gradual (CrossFade) or abrupt (CrossSwitch). You can fade or switch from the Primary Instrument to the Secondary or vice versa. The modulation controls determine how the fade or switch is to be accomplished. Select a modulation source (pitch bend, mono pressure, velocity, etc.) and CrossFade for the destination. When you activate that form of modulation, you'll trigger the fade or switch. The Balance slider lets you set the initial relationship between the two Instruments and the Amount slider lets you determine how much modulation will be required to effect a complete transition from one instrument to another. Being able to fade Instruments in and out from each other can add more depth and texture to a sound than just playing the two Instruments together at the same time. Being able to switch between two Instruments can let you create keyboard splits (bass in the left hand, piano in the right for example) or velocity switched layers (strings when you play lightly, horn stabs when you smack the keyboard).

The Modulation controls are extensive and one of the most comprehensive in the industry for a synth in the Proteus' price range. The possible sources and destinations certainly put the One-Stop Music Shop towards the head of the pack of similar sound cards on other platforms. The Modulation controls can be found in the Real-Time and the Key/Velocity Modulation Control windows. The Real-Time window allows you to set the Pitch Wheel, two LFOs, Mono or Poly pressure, one of four assignable MIDI controllers or an auxiliary envelope as a modulation source. All the standard controls you'd expect from a low frequency oscillator are there—a variety of shapes (triangle, sawtooth, sine, square and random), and adjustments for the amount, rate and delay of the effect. In addition, the LFOs have a variation feature, which lets you set a random amount of variation to the rate, so that each key modulates at a different speed. This will help to emulate the variations noticeable when you perform on an acoustic instrument. The Key/Velocity window lets you select either a note's value or its velocity as modulation sources. You can control a wide variety of



One-Stop's Real-Time Window (top) allows you to set the Pitch, two LFOs (low-frequency oscillators), Mono or Poly pressure, one of four assignable MIDI controlers or an auxiliary envelope as a modulation source. The handy MIDI file player (right) will allow you to play MIDI files created in any sequencer through the One-Stop Music Shop.

destinations with these sources, including, but not limited to, the pitch, volume, attack, decay and release of either Instrument individually or of the overall sound. Almost anything you can think of can be affected by the modulation sources. With eight different Real-Time controls and six Key/Velocity controls assignable to over 30 different destinations, you can twist a sound considerably without having to switch Instruments, add Links or doing anything else allowable.



The One-Stop Music Shop's Links Window and the Miscellaneous Parameters Window.

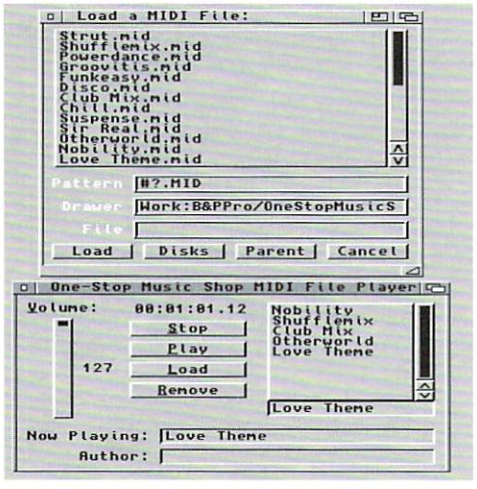
Eight Instruments at Once

The Miscellaneous Parameters window contains controls for selecting footswitch controls, keyboard tuning, velocity curves, and the like. The Links window lets you layer up to three different presets with the current one. This means you can have eight different Instruments playing at once whenever you press a key. You could also assign each Link to a different part of the keyboard for up to eight distinct zones. It's easy to O.D. on the possibilities of the One-Stop Music Shop very quickly if you're not careful.

All the controls described so far affect a single preset. There is a Global Parameters selection from the SoundEngine menu that will let you make changes that affect all 192 sounds. Such parameters as master volume and tuning, the four MIDI controller numbers, and the pitch bend range are set here. Some of the edit parameters in the individual presets have a Global option. Those that have this option set will get their values from the global parameters settings.

Other options that could be considered global are the standard load and save commands. Some not so standard options include Save Patch List, which will save a list of the first 128 patches for use in Bars & Pipes Professional and SuperJAM! MPC Mode will disable MIDI channels 11 through 16, as per the MPC specs.

Once you get a handle on the concept of the editor in the One-Stop Music Shop, modifying existing sounds is a breeze. The amount of control provided is more than sufficient for the most discerning professional. There are a few things you might miss, however. For example, there is no way to generate and control portamento, nor is there a way to control filter settings. These are not shortcomings in the editor, but design characteristics of the sound engine—portamento is not possible with a digital synth and there is no filter in the Proteus sound engine. You'll have to hang on to your MiniMoog for those types of sounds and effects—you didn't really want to sell it anyhow, did you?



One-Stop's MIDI File Loader.

MIDI File Player

The One-Stop Music Shop comes with a standard MIDI file player. This will allow you to play MIDI files created in any sequencer through the One-Stop Music Shop. The only catch is that your MIDI file must conform to the General MIDI specification. This means your drum notes and your program changes must match the map adopted by the General MIDI spec. In time, for better or worse, I suspect most sequences you purchase or create will gravitate toward the General MIDI standard. For now, you need to be aware of this design characteristic of the One-Stop MIDI File Player. All sequences created with the One-Stop Music Shop will play back through the One-Stop MIDI File Player without a hitch.

Running the One-Stop MIDI File Player is as simple as clicking on its icon and loading a file. The One-Stop MIDI File Player looks for MIDI files ending with a .mid extension by default. Because the One-Stop MIDI File Player is an AppWindow under 2.0, you can drop your MIDI file icon into the file player's window, or use the traditional file requester. The SMPTE time will display as the file is

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playing. You can load as many files as you have memory for. The One-Stop MIDI File Player is ARexx compatible. You can modify an included ARexx script to play your files one after another if you'd like, or you can write your own script and control it from any ARexx compatible program. You can even sync up the file player to SMPTE time code with the included MTC Sync program and Blue Ribbon's SyncPro Universal Synchronization Box. It's becoming increasingly apparent that Blue Ribbon is positioning themselves and their products to be a complete and integrated MIDI and audio solution not just for musicians and composers, but for the video professional as well.

Integration

There is a whole set of Tools and Accessories included with the One-Stop Music Shop for integrating it with the Blue Ribbon MIDI software environment through Bars & Pipes Professional. The One-Stop Music Shop itself can be loaded as an Accessory to B&P Pro and SuperJAM! This sports all the same features as the stand-alone version. Some of the functions of the full editor are condensed into a separate Accessory called the Control Panel. This provides you with control over master volume, MPC mode, and the reset function. The included Tools give you access to the sound engine (SoundEngine In and Out) and the MIDI interface (One-Stop MIDI In and Out), and make it easy to assign General MIDI patches to your tracks (General MIDI). The SoundEngine Tools replace the standard MIDI In and Out Tools, letting the One-Stop Music Shop editor receive SysEx data from the sound card and send track information to the sound card. The One-Stop MIDI In and Out Tools allow you to send and receive data through the MIDI interface on the sound card, thus freeing up your serial port for non-MIDI applications, or for using an additional MIDI interface. This would give you an extra 16 channels, all available at once through Bars & Pipes Professional. The General MIDI Tool lets you assign program changes based on the General MIDI spec. Double clicking on the Tool, then dragging the slider will display the General MIDI names and send a test note out on the track's MIDI channel. The General MIDI Tool can place a program change command at the beginning of the track (Automatic) or at the current song position (Install).

Bars & Pipes Pro

Some of the changes incorporated into Bars & Pipes Professional 2.0 have a direct bearing on the use of the One-Stop Music Shop. The new version of Bars & Pipes Professional can load and save patch lists created with the One-Stop Music Shop. This will allow you to create different preset environments, using your favorite sounds as defaults. There is also a new version of the MuFFy Accessory, called sMerFF, which will create MIDI files that can be played with the One-Stop MIDI File Player. The advantage to the new version of the Accessory is that it remembers tempo settings. All files created with MuFFy default to a setting of 120 BPM.

The Patchmeister Too

You'll be able to use *The PatchMeister* to organize your sounds in the One-Stop Music Shop, just as you could any supported MIDI device. A driver is provided on the One-Stop Music Shop disk, and can be used in the stand-alone version of The PatchMeister and the Bars&Pipes Accessory version. You'll have to wait for the next version of The PatchMeister to be able to work with the One-Stop Music Shop through SuperJAM! The current version cannot access the SoundEngine Tools.

The One-Stop Start-Up is a way to load your own set of sounds into the One-Stop Music Shop at bootup. Just make your changes to the default set of sounds and select Save As Default from the File menu. This will tell the One-Stop Music Shop to load that set of sounds when you click on the One-Stop Start-Up icon. You can also drop the icon into your WBStartup drawer or add the command "One-Stop Startup" to your startup-sequence to boot the sounds whenever you boot your computer.

The manual is standard Blue Ribbon fare, which is to say very well done, and includes a listing of all the General MIDI presets, SoundEngine samples, and other technical specifications that will help you delve deeper into the mysteries and possibilities of MIDI and the One-Stop Music Shop. The complete set of System Exclusive commands is included as well, to facilitate writing your own Tools and Accessories, if you are so inclined.

Bummers

There must be a special Murphy's Law for reviewers that states, "No matter how good a product is, you'll always wish it were better." As good as the One-Stop Music Shop is, yes, there are some things I'd like to see done differently. The keyboard icons in the One-Stop Music Shop windows always play both Instruments.

This can be distracting when you're trying to edit just one of the Instruments. When asked about it, tech support suggested that you'll want to hear how both Instruments sound together as you make changes to either one of them. That explanation didn't quite satisfy. Tech support then noted that to turn one Instrument off and on would require sending a complete SysEx packet each time, which would take some time and could possibly clog the data stream. That makes more sense to me, although it seems a terrible design flaw in an otherwise well-designed synth. For now you'll have to drag the Volume slider to zero for the Instrument that you're not editing if you'd prefer to work with just one Instrument during the edit process.

I don't think I'll ever get used to the Blue Ribbon scrolling file requester. It's just too easy to make a mistake with it and even though it has been speeded up a bit, it still takes too long to scroll through a long list of files. While there is an option to use the Workbench 2.0 requester, this is only active with actual files to be loaded or saved from disk. Such items as the Instrument selector still make you scroll through 192 possibilities.

The One-Stop MIDI Tool icons and the Sound Engine Tool icons are practically indistinguishable. The only difference between the two is the five dots on the MIDI In & Out Icons. Not a major problem, but even using a different color would help.

Endit

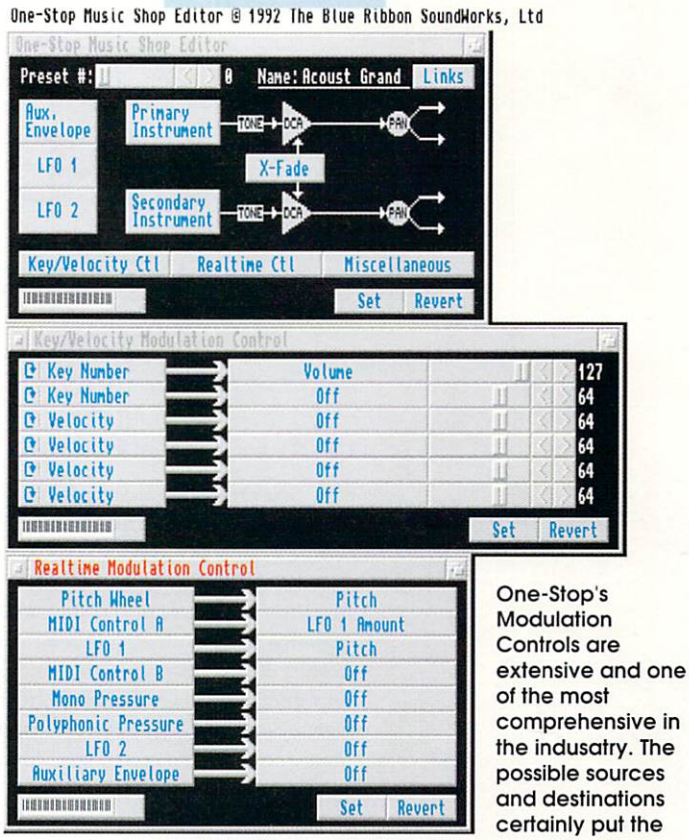
The delight in using the One-Stop Music Shop is the way it works with all the Blue Ribbon software. It makes SuperJAM! a joy to use. It means you won't have to bring your synth rack home from the gig to compose or arrange more music. Just boot up Bars & Pipes and get busy. Save the work off as a MIDI file and take it to the gig. What could be easier?

I said it before: this is going to change how you make music with your Amiga now and forever. Working with the release version of the One-Stop Music Shop and its software for the last few weeks hasn't changed my mind at all. You'll enjoy this one.

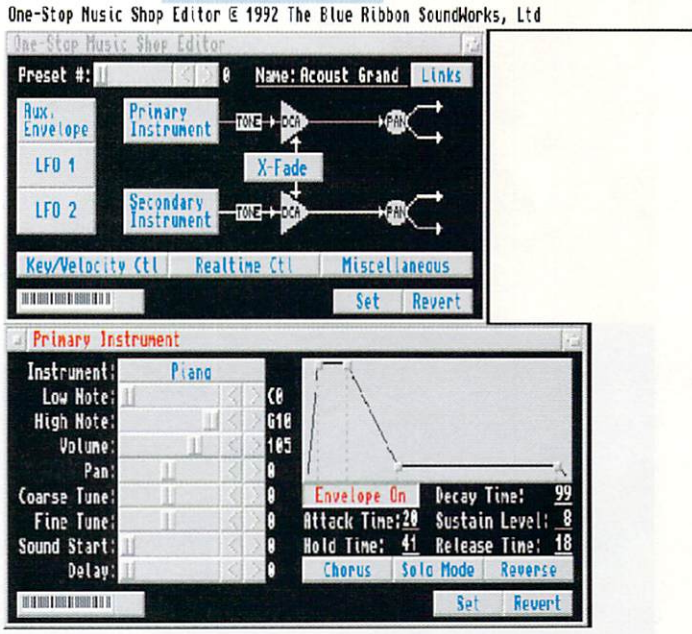
One-Stop Music Shop
Blue Ribbon Soundworks
Venture Center
605 Chantilly Drive Suite 200
Atlanta GA 30324
404-315-0212
Inquiry #201

Special Requirements: Amiga 2000, 3000 or 4000 with at least 1MB memory

Please Write to:
Rick Manasa
c/o Amazing Computing
P.O. Box 2140
Fall River, MA 02722-2140



One-Stop's Modulation Controls are extensive and one of the most comprehensive in the indusatry. The possible sources and destinations certainly put the One-Stop Music Shop towards the head of the pack.

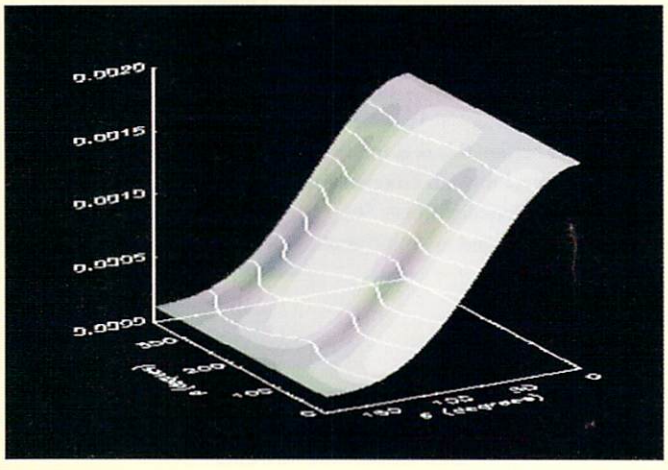


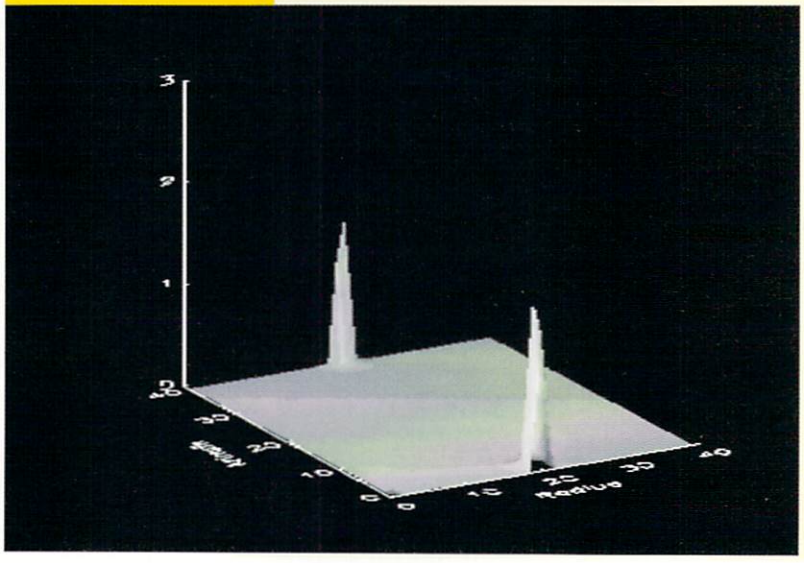
The controls in the Instrument Window (above) are easy to understand. You can change the Instrument, the Volume and Pan position, and the Coarse and Fine Tuning.

Scientific Visualization

The rapid increase in raw computing power available for scientific research is a mixed blessing. While today's workstations can perform sophisticated simulations of processes in the real world, the sheer volume of the results and their complexity often make synthesizing and interpreting the results difficult. Scientists have recognized the power of animating results and creating videos to convey information efficiently. A movie of one's data or computer simulations is like a three-dimensional graph: the two dimensions of the video screen, and time as the third dimension. Unfortunately, the process by which scientific results are transferred to video is often time-consuming and prohibitively expensive.

A colleague of mine had observations and simulations of Jupiter's Io plasma torus, a vast region of hot, ionized gas that circles Jupiter at the orbit of the innermost Galilean moon, Io. Io's volcanoes spew sodium, sulfur, and oxygen compounds high above the surface of the moon where they become charged in Jupiter's magnetosphere and are carried away. As Io moves through the magnetosphere, the particles create a beautiful dancing torus when observed through the proper filters. University of Colorado astronomer Dr. Nick Schneider and his colleagues created a video of observations of the Io plasma torus and their simulations of it. Making the video involved transferring image files to a computer at the National Center for Atmospheric Research (NCAR),





where they were written to an optical disk that could then be transferred to video. The frame rate and number of repeat loops of the video had to be programmed into the computer at NCAR. This is not a particularly easy or accessible path for many scientists to take if they wish to see their results animated on video.

My own research involves computer simulations of the disruption of planetary satellites by comet impacts and the formation of a planetary ring from the debris. The calculations are performed on a DECstation 5000/240. The simulation is written in C, and the output is sent to a file. I then read the output from the Interactive Data Language (IDL) programming environment. The Amiga program most similar to IDL is *Maple V*. It allows shaded surface plots to be created with simple, one-line commands such as:

Advancing science with the Amiga

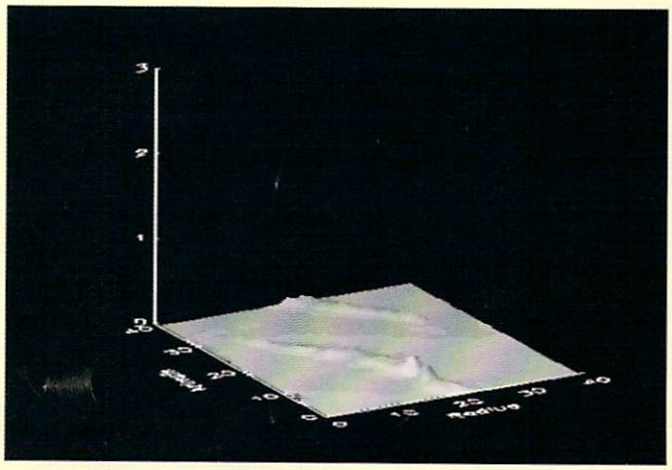
by Joshua E. Colwell

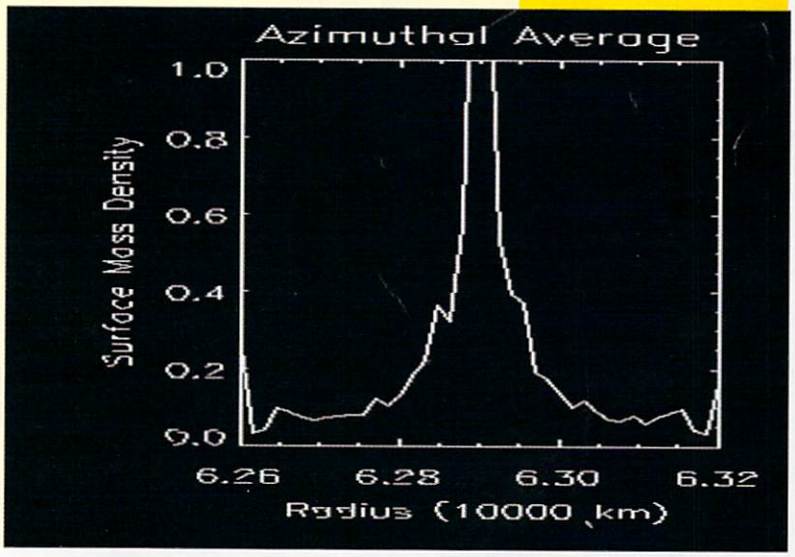
shade_surf,massdist. The "massdist" array could be a two-dimensional map of the distribution of fragments some time after a comet hit the moon. Obviously it would be nice to see the distribution of moon fragments evolve with time, eventually encircling the planet to make a planetary ring. Anyone familiar with Amigas recognizes that this is a task naturally suited to the Amiga.

The only problem was transferring the image from an IDL window on my DECstation to my humble Amiga 500 as a standard IFF file. After sizing the IDL window to a standard Amiga screen resolution (320 by 400) and creating the desired surface plot with a shade_surf command, the next step was to read the contents of the IDL graphics window into an array. Fortunately, IDL has a command to do this: image=tvrd(window number). This creates a byte array (8 bit planes) of my picture called "image." I then used an IDL routine called write_gif to send this array to a GIF file. I downloaded the GIF file with Kermit to my Amiga running Platinum Works telecommunications module, and converted it to HAM using a public-domain conversion program, *HAMsharp*. Repeating this process for a number of different images and assembling them into an animation file using *BuildANIM* from Progressive Peripherals and Software gave me a movie of the formation of a planetary ring. The final step was accomplished with my Amigen genlock to produce a video tape of my results that I can show at scientific meetings.

This may sound like an everyday application of the Amiga to those familiar with it, but the scientific community is largely unaware of this low-cost, easy way to transfer their results into video movies. With a stock Amiga 500, modem, and genlock I was able to accomplish what others are doing with time-consuming and expensive processes on remote computers. Obviously, the quality of the final product would be improved with the new AGA Amigas. The new graphics architecture would ensure no loss of information in the transfer of the images from 8-bit GIF files to Amiga format. I think many of my colleagues will be surprised and delighted to find out that for less than $2000 they can have a complete Amiga system to transfer their results to video. I hope that by showing my results at scientific meetings around the world the Amiga will win a whole new constituency of users.

•AC•





Please Write to:
Joshua E. Colwell
c/o Amazing Computing
P.O. Box 2140
Fall River, MA
02722-2140

MEDIA MADNESS!



PROBABLY THE BIGGEST CONTRIBUTION TO *Bars&Pipes Professional* 2.0 is the addition of *Media Madness*. Media Madness integrates multimedia authoring into the Bars&Pipes Professional environment.

With Media Madness, you can create and edit events in multiple media timelines. Media Madness supports everything from music to animations to Toaster transitions. Because of Bars&Pipes Professional's expandable design, you can add new media extensions to Media Madness as they become available.

In this article, we'll take you on a tour "under the hood" and show how Media Madness works. We'll include a programming example: the Yak Tool. Yak converts text events into spoken dialog by utilizing the Amiga's built-in text-to-speech capability. Use the Yak Tool to place spoken dialog at specific points in your multimedia performance.

How Did a Music Program Turn into a Multi-Media Authoring System?

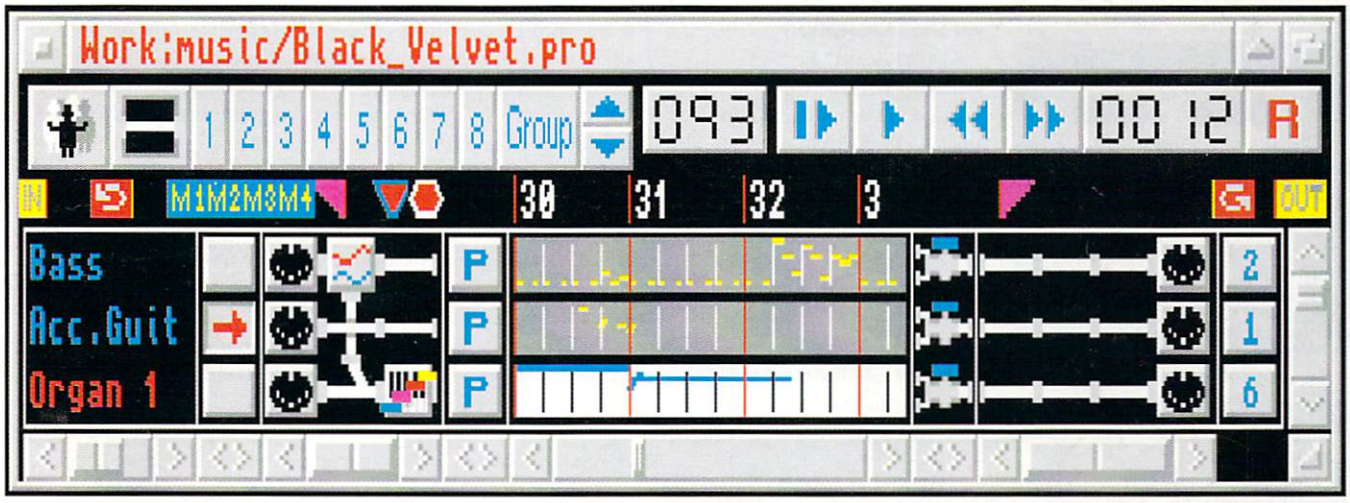
Before we get to Media Madness, it's necessary to understand a bit about the mechanics of Bars&Pipes Professional. As you may know, Bars&Pipes Professional accomplishes music composition, arranging, and performance using the multi-track recorder approach. With Bars&Pipes Professional, you assign an individual track to each musical part. There's no limit to the number of tracks allowed, so it's very appropriate to place each instrument in a separate track. For example, one track might perform a violin part while a second track plays the drums. The two tracks play side by side, performing perfectly in step with each other. Although most pop songs usually involve little more than a dozen tracks, a sophisticated orchestral score could use up more than a hundred.

Bars&Pipes Professional introduces a unique concept to music composition and performance: PipeLines and Tools. Each Bars&Pipes Professional track has two "PipeLines" attached to it. Music flows through the first PipeLine into the track, where it is recorded. This is called the input PipeLine. On playback, music flows out the second PipeLine, the output. Special modules, called "Tools," can be placed in the PipeLines. Each Tool processes the music flowing through it. For example, the Transpose Tool shifts the pitch of notes passing through it up or down by a user-specified amount. The very first Tool on the input PipeLine is an input Tool. It feeds music into the PipeLine. The very last Tool on the output PipeLine is an output Tool. It takes the music and sends it out into the real world, usually a MIDI sound module.

Tools are actually separately loadable modules. You can install just the Tools you need, and add new Tools as they become available.

In Bars&Pipes Professional's Tracks and Song Constructions windows, you may view the tracks side by side, performing from left to right. Although there is a graphic editor for close analysis and editing of each individual track, the multiple track overview lets you see the various components of the performance in one place.

The Tracks window displays each track from left to right with the name first, followed by the input PipeLine, the recorded sequence, and the output PipeLine capped by the output Tool, usually MIDI. This display makes it very easy to understand the relationship between multiple tracks. It shows how each track's performance relates to the others. It also shows how the performance flows down the output PipeLine into the output Tool. The output Tool converts the notes from software events into electronic MIDI signals coursing down the MIDI cable to your sound module. Replace the output Tool with a different MIDI device and the notes get sent to that one instead. A good example would be to use a *One-Stop Music Shop* Tool to perform via the One-Stop's Proteus SoundEngine.



So What Does This All Mean?

Think of each track as a written performance which gets interpreted by the MIDI device at the end of the PipeLine. Set up a MIDI synth to play the violin and place a MIDI Out Tool on the track with the violin part. Use a One-Stop SoundEngine Tool to send a drum part to the drum section in the One-Stop's Proteus hardware. Each output Tool acts as a performer, interpreting the notes in its track.

Now, let's broaden our scope. We'll add some multimedia performers. Remember, Tools are separately loaded modules, so we can create new Tools that interpret the music in new and unexpected ways.

The Amiga's great for playing animations and displaying ILBM images, so how about a Tool that performs with animations and another Tool that shows pictures? Each of these Tools interprets the performance in its track visually. For example, when a particular note enters the picture Tool, it displays a corresponding picture.

There's no question this is easy to do. A Tool that assigns specific note values to specific images is easy to write. But there's a problem: it's clumsy to use. Musical notes and pictures have very little in common. While it makes sense to draw a note, for example C#, in a violin track, it makes little sense to correlate the note with a picture if the track is an image track. Instead, if the image is of a flying cow, the command, "display flying cow," is much more appropriate.

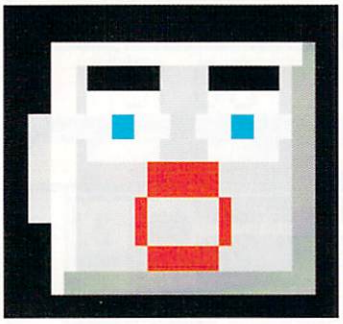
Media Madness

Enter Media Madness. Media Madness adds new extensions to Bars&Pipes Professional's architecture that make it very easy to enter, edit, and perform media other than music.

Media Madness turns Bars&Pipes Professional into a multimedia capable program primarily through two features:

1) Hit List Translation.

2) The Media Madness window.



Hit List Translation

As you already know, Bars&Pipes Professional's Sequencer communicates in the language of MIDI. However, each different media thinks in terms all its own. For example, our Yak Tool deals with snippets of speech, not notes.

As such, we need to translate each Tool's language into the common language of Bars&Pipes Professional: music. Fortunately, this is remarkably simple and painless due to the Hit List Translation feature.

The Hit List Translation mechanism assigns a textual description to each note in the track. For example, C5 might have the description "Hello" while D#4 has the description "I'm talking to you." When the Yak Tool receives a C5, it says, "Hello." When it receives a D#4, it says, "I'm talking to you." From a user's perspective, "Hello," not C5, describes the action to take.

Like Yak, most Media Madness Tools present obvious applications of Hit List Translation. Image files, sound effects, visual effects, etc., should all be described by name rather than MIDI note, even if Bars&Pipes Professional uses MIDI notes to trigger these events. Conveniently, the textual description of a command for Yak is also the words it speaks, but with most other Media Madness Tools, this is not the case.

Each Media Madness Tool lets you assign a specific command to each note. The command might be a Toaster ARexx command, a particular IFF file, or a sound effect sample file, depending on the Tool. The Tool automatically installs textual equivalents for each command in the Track's Hit List Translation table.

Now that we can assign a textual description to each event, we need a convenient way to edit these commands in a performance. The Media Madness window provides the solution.

The Media Madness Window

Although the Tracks window shows the performance in multiple tracks side by side, it's much too musically oriented for multimedia purposes. While a musical track is composed of hundreds of little notes that describe a performance, a Yak track is composed of just several words displayed at specific points in time. It makes sense to show notes as little lines, vertically positioned in a piano-roll-like display to show pitch. On the other hand, it makes sense to identify a Media Madness event with its hit-list name.

The requirements for editing multimedia and music are also different. With multimedia, we need to be able to arrange our tracks side by side and enter, drag, and edit events in a SMPTE timeline. Music, on the other hand, is denser and more two-dimensional. We enter music by recording in real time and edit it on a track-by-track basis in a two-dimensional graphic editor.

In answer to these requirements, the Media Madness window displays media events with descriptive names and provides complete editing of the events in each track's time line.

Like the Tracks window, the Media Madness window displays a stack of tracks, each performing from left to right in time. However, it displays only information relevant to creating a multimedia performance. Hence, both input and output PipeLines are gone, although they still exist under the hood. The final output Tool for each Track remains. This is important because the output Tool defines the type of media stored in the track. A MIDI Out Tool indicates a music track. The Toasty Tool indicates a track with Video Toaster commands. The icon for our programming example, the Yak Tool, indicates the track is filled with commands for the Amiga's text-to-speech device.

Setting Up a Media Madness Tool

All Media Madness Tools have a control window that can be accessed by double-clicking on the Tool icon in the Media Madness window.

The Tool's control window allows you to edit its various parameters. Media Madness Tools usually display the list of commands in the bottom half of the window. The list ties each command to a specific MIDI note. You can create commands for each note by selecting in the list and editing the selection. Unless you actually intend to trigger specific commands from a musical keyboard, there is no need to pay any attention to which notes are assigned to which commands.

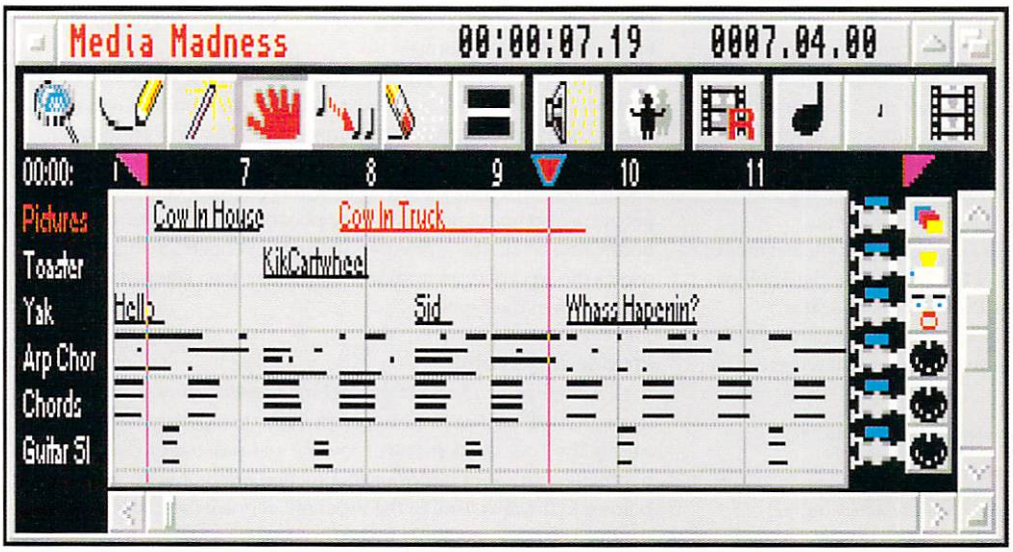
In our Yak example, we use the control window to type in all of the desired text strings for the speech device. Above the command list, two text fields correspond to the currently selected command. The first field accepts the actual text to send to the speech device. The second field accepts a descriptive label. If you provide a descriptive label, Yak uses the label for the Hit List Translation instead of the text. The label appears in the Media Madness window instead of the text. This is particularly useful with Media Madness Tools that work with files. For example, The Last Slide Show Tool displays ILBM images. Although the Tool needs to know the name of a picture file, "DH3:work/pictures/cowfly.ilbm" is nowhere near as concise as "Flying Cow" in the Media Madness editor. Most Media Madness Tools provide a label option.

As you edit the commands, the Yak Tool installs the Hit List Translations for the commands in the Track. They become the set of available options in the Media Madness window.

Editing the Media Madness Tracks

Once you've set up a palette of commands in your Media Madness Tool, return to the Media Madness window. The Media Madness window has all of the standard Bars&Pipes Professional editing controls. Use these to enter, drag, erase, and change these commands in the Media Madness time line. For example, if you click down with the pencil, a scrolling pop-up list appears under the mouse with all available commands. Select your choice and it appears as an event in the time line.

Notice that you never see the event as a MIDI note. Media Madness keeps the underlying note translation mechanism completely hidden.



The Media Madness Player

Although you can load and save your Media Madness performance as a Bars&Pipes Professional song file, you might also save it in the Media Madness Player format. The freely-distributable Media Madness Player performs your entire Media Madness performance, including MIDI music, without requiring Bars&Pipes Professional. Using very little memory overhead, it can load multiple Media Madness performances and play them back, all optionally under ARexx control. Combined with any of the Amiga's interactive authoring systems, including *AmigaVision* and *CanDo*, the Media Madness Player provides you with the ability to perform linear multimedia segments in an interactive environment.

The Media Madness file format optionally embeds the Media Madness output Tools within it. This allows you to install or even create a new Media Madness Tool, use it in a composition, then distribute the performance to others who don't have either the new Tool or Bars&Pipes Professional.

Writing the Yak Tool

Now that we have a better understanding of what a Media Madness Tool does, let's learn how to write one.

Bars&Pipes Professonal Tools are written in C, so you must be reasonably proficient in C programming. Of course, you also need a C compiler. We use the SAS, formerly Lattice, C compiler for all our work, and people have written Bars&Pipes Pro Tools with Aztec C in the past.

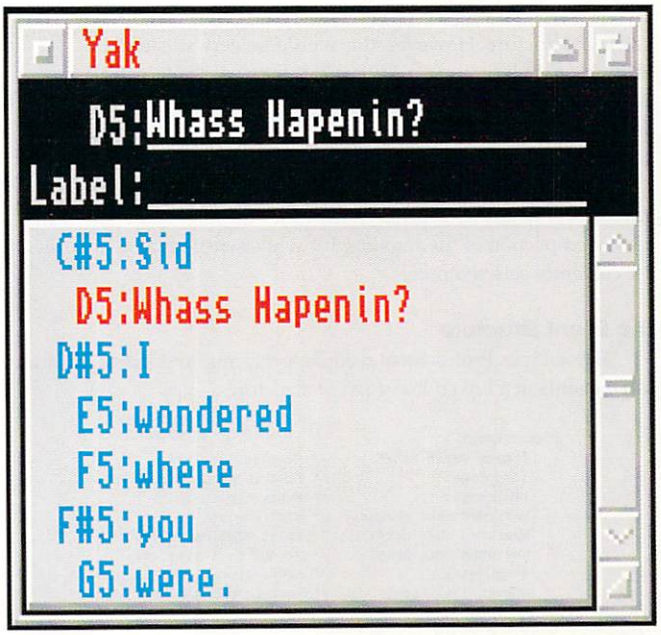
Unfortunately, space limitations preclude us from a complete tutorial on writing a Bars&Pipes Professional Tool, so we'll make some assumptions and gloss over areas that are not specific to Media Madness and the Yak Tool. However, we've put together the source code and all associated files. The source code is extensively documented, so it should answer any other questions you might have. We'll be uploading this to Genie and Compuserve as well as including it with the release Bars&Pipes Professional 2.0.

The ToolMaster Structure

As you probably know, Bars&Pipes Professional Tools are actually separately loadable modules. Because of Bars&Pipes Professional's open-ended design, it's very easy to create new Tools and plug them into the system. When Bars&Pipes Professional first runs, it loads each Tool file and calls an initialization routine provided by the Tool. That routine sets up a standard structure called the ToolMaster structure and returns a pointer to it which Bats&Pipes Professional links into the Tool list displayed in the ToolBox window.

Bars&Pipes Professional also hands the Tool the address of a global structure called "functions," which provides pointers to routines and data within Bars&Pipes Professional. In this way, not only does the Tool provide Bars&Pipes Professional with hooks into its internals, but the functions structure gives the Tool access to over a hundred internal routines and data structures within Bars&Pipes Professional.

Bars&Pipes Professional's Tool mechanism is object oriented in design. Each ToolMaster structure provides Bars&Pipes Professional with a set of data and predefined callback routines that describe how the Tool should behave in certain circumstances. Each



Top: The Media Madness window. Above: The Yak window.

ToolMaster structure provides routines to load, save, and edit a Tool as well as the routine called by the PipeLine handler to process an event. This routine, called the processevent routine, determines the very behavior of the Tool. In our Yak Tool example, the processevent routine converts a MIDI note into a text string and sends it to the speech device.

The YakTool Structure

Although the ToolMaster structure aptly describes the attributes and behavior of the Tool in general, it's incapable of storing the attributes of each unique instance of the Tool, once there are several copies in the PipeLine. Bars&Pipes Professional uses a separate data structure, a Tool structure, to keep track of each copy of the Tool. In turn, the Tool usually adds extra fields to the Tool structure so that it may keep track of its own parameters.

Yak uses the YakTool structure to keep track of each instance of the Tool. Every time you drag a copy of the Tool out of the ToolBox and place it in a PipeLine, Bars&Pipes Professional allocates a unique YakTool structure. You may assign different parameters to each Yak Tool and each reacts differently to the notes it receives.

```
typedef struct YakTool {
    struct Tool tool;     /* Embedded Tool structure. */
    char *strings[128];   /* Text for each note. */
    char *comments[128]; /* Label strings. */
    char topindent;       /* For user interface - top of list.*/
    char selectedvalue;  /* Currently selected string. */
} YakTool;
```

The Tool structure embedded at the start of the YakTool is a standard Bars&Pipes Professional Tool structure. The Tool structure maintains variables that are necessary for all Tools. For example, it keeps a pointer to the next Tool in the PipeLine. And, it has fields for its X and Y positions in the PipeLine grid in the Tracks window.

Each Tool starts with this standard structure, then adds fields that are appropriate for its own use. The Yak Tool adds pointers to up to 128 strings. Each string is a 100 byte character array with text in it for the speech device. Since there are 128 MIDI note values, each note references its string by indexing directly into the array. Likewise, the comments array stores alternate labels for each text string.

It would be simpler to embed the string buffers within the YakTool structure. However, this would be very wasteful of memory, gobbling up an addition 25K for each Tool! Instead, we allocate memory only for the commands and labels currently defined in the Tool, since it is very rare to have anywhere near all 128 notes defined simultaneously.

The topindent and selectedvalue fields are used to manage the Yak control window. Topindent identifies the note at the top of the displayed portion of the scrolling list while selectedvalue identifies the currently selected note.

The Event Structure

Bars&Pipes Professional records, performs, and stores musical MIDI events in a linked list of Event structures.

```
struct Event {
    struct Event *next;     /* Next in list. */
    long time;              /* Time in performance. */
    char type;              /* Event type. */
    unsigned char status;   /* MIDI status. */
    unsigned char byte1;    /* First MIDI data byte. */
    unsigned char byte2;    /* Second data byte. */
    long data;              /* Extra storage. */
    struct Tool *tool;      /* Tool to process this next. */
};
```

The 'next' field maintains the linked list of events that compose a performance.

The 'time' indicates the absolute time in 192 clocks per quarter note of the event.

The 'status', 'byte1', and 'byte2' fields carry the MIDI data. Status indicates the MIDI type, determining whether it is a note, a pitchbend command, or a volume change, among many. Byte1 and byte2 carry optional data, dependent on the status type. For example, a note on status is followed by the note value in byte1 and the note velocity in byte2. The Yak Tool processes only note-on events, all others it discards.

The 'tool' pointer indicates which Tool in the PipeLine is destined to receive the event next. When a Yak Tool receives an event, this pointer carries the address of the Yak Tool instance.

Bars&Pipes Professional records a track's sequence as a linked list of Event structures. Each represents one MIDI command. The program also maintains a memory pool of Event structures. When it performs a track, the sequencer allocates Events from this pool, copies the recorded performance into them, then sends the copied Events down the PipeLine.

Processing Events

A high-priority task, the PipeLine handler, moves Events through the PipeLine. It presents an Event to a destination Tool by calling the Tool's processevent routine and passing the Event as a parameter. The Tool performs its function on the Event, sets its Tool pointer to the next Tool in the PipeLine, if one exists, then returns the Event back to the PipeLine.

A Media Madness Tool usually checks if the Event has a MIDI status of Note On. If it does, instead of actually trying to make musical sense of the MIDI note value, the Tool typically uses it as an index into a lookup table of commands to actually perform. In the case of our Yak Tool, these commands are the text strings to send to the speech device.

Let's take a look at the processevent routine for the Yak Tool.

```
static struct Event *processeventcode(
    struct Event *event)
{
char *s;
    YakTool *tool = (YakTool *) event->tool;
    if (event->status == MIDI_NOTEON) {
s=tool->strings[event->byte1];
if (s&&s[0]) {
        sendcommand(tool,event->byte1,event->byte2);
    }
}
    event->tool = tool->tool.next;
    return(event);
}
```

The processevent routine receives the Event. From the Event, it extracts the pointer to the specific instance of theYakTool in the PipeLine. This is important, because there could be more than one Yak Tool, each with a different set of text strings.

If the Event is in fact a MIDI Note On Event, it calls sendcommand(), which performs the translation and communication with the speech device. We'll get to that in just a second.

Then, it sets the Tool pointer to the next Tool in the PipeLine. This tells the PipeLine handler where to send the Event next. Of course, being a Media Madness Tool, the Yak Tool is always the last Tool in the PipeLine, so the next Tool is always NULL. However, it's good practice to do it this way. (Notice that you can use this mechanism to send the Event to any other Tool in existence. That's how Branch and Feedback Tools accomplish their magic.)

Finally, it returns the Event. This is necessary because some non-Media MadnessTools create multiple Events out of one Event

(continued on page 76)

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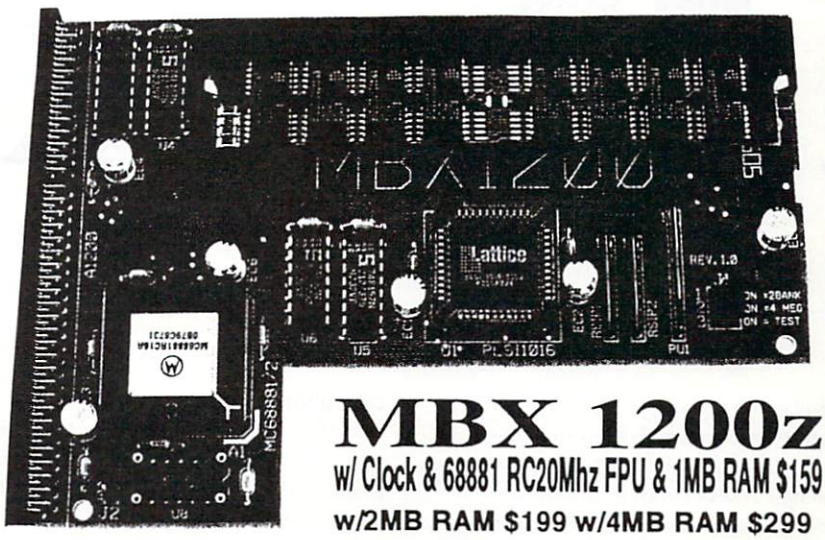
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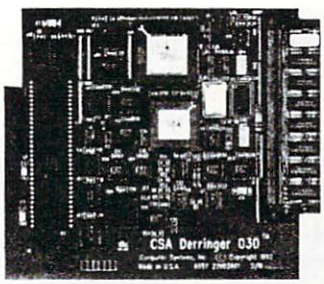
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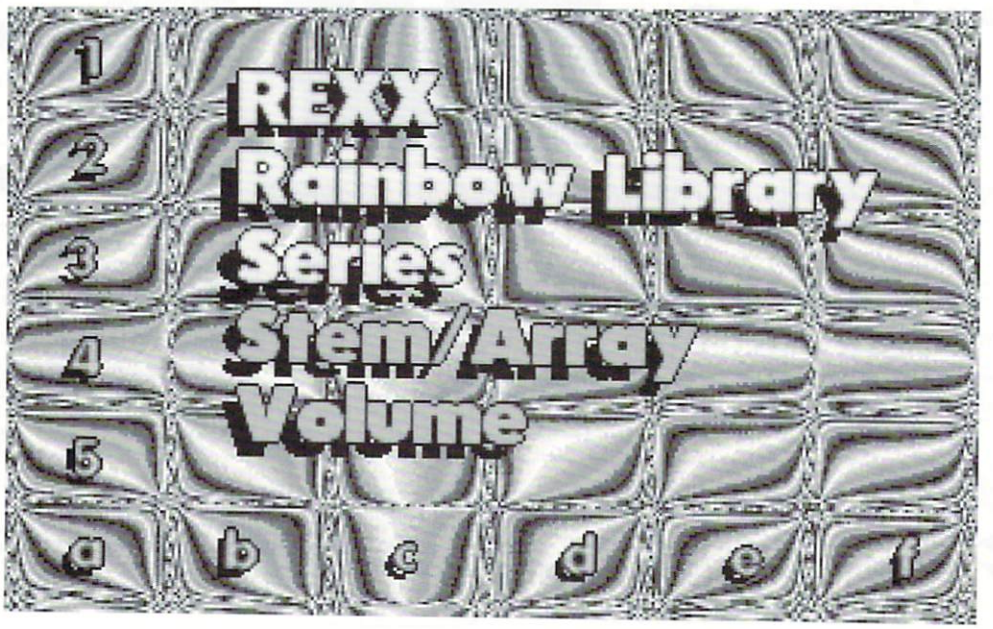
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ARexx

We want to start learning about arrays. For more experienced users, we present examples of Stem/Array Functions from the *REXX Rainbow Library Series* by the Dineen Edwards Group, who are developing a series of useful new ARexx libraries. An ARexx Library is a shared library file you store in your Sys:Libs directory like any other library. Using the ARexx function, ADDLIB(), or the command utility RXLIB you may add an ARexx-Specific library to your ARexx Library List, and expand the ARexx function set to include the functions in the library. Two ways to add the Stem/Array Functions to your environment are:

(1) From a Shell you would enter:
RXLIB rexxarray.library 0 -30 0
(2) Inside an ARexx program you code this line:
Call AddLib("rexxarray.library",0,-30,0)

The file rexxarray.library (the library that you stored in Sys:libs), is case sensitive. Type it in exactly as shown. The first number, called an "argument," is the priority, usually zero; the second number is the dispatch offset (very important to get right or you get a crash). The offset is always included in library documentation. The last number is the version number—zero will always work.



Definitions

What do these Stem/Array Functions do? For the less experienced, we'll define some terms beforehand. ASCII text characters make up an ARexx program. In any language the smallest entities which convey meaning are words. ARexx calls its words "tokens." Tokens are grouped into the following five classes: "comments," "symbols," "strings," "operators," and "special characters."

Token Examples

```
Comment:  /* This /* with delimiters */ is a comment token */
Comment:  /* A comment can come anywhere. We use them to
explain. */
Comment:  /* A comment doesn't affect the program at all */
Comment:  /* All ARexx programs must begin with a
comment!! */
Symbol:   SYMBOL  /* Simple symbol */
Symbol:   x       /* Simple symbol: A "variable". */
Symbol:   9.45    /* Fixed symbol: a floating pt. number */
Symbol:   10      /* Fixed symbol: an integer */
Symbol:   Stem.   /* Stem symbol: the name of an array. */
Symbol:   Stem.1  /* Compound symbol: an array element */
          String:  "Literally what is
between the double quotes"
          String:  'or also delimited
by a single quote'
          String:  'Quote inside a
string: Isn''t this clever?'
          String:  'Length of string:
number of characters.'
          String:  'A null string is on
the next line.'
          String:  ''
          String:  '001011011'B  /*
binary number string for 91 */
          String:  '9C E5 44'X  /* hex
number string for 10,282,308 */
          Operator: +  /* There are
26 Definitions for operators! */
          Operator: -
```

Introduction to ARexx Arrays with a Look at the REXX Rainbow Library Volume of Stem/Array Functions

by Merrill Callaway

Operator: /
Operator: *
Special Characters: () : ; , /* Five separate special characters */

Further Subdivisions

Classes may be further subdivided, as we can see. We will look at stem and compound tokens this month. For further reading, study Chapter 3 of the *ARexx Manual*, or Chapter 2 of *The ARexx Cookbook*.

Symbol Values

Three concepts are essential. The first is Symbol Values. A simple symbol is "uninitialized" if we have not yet assigned a value to it. For instance, the simple symbol "x" stands for some unknown quantity. Assign a value to x with an "Assignment Clause" like this: x=1.2 (a fixed symbol) or x='roast beef' (a string token). Note: x may be *anything*. ARexx uses "typeless variables"; i.e. it takes care of the Declaration or what type of variable it is, at the time we assign it. The value of x becomes the value of whatever it's assigned, and retains that value until something changes it. Suppose we add a number 2.0 to x when x=1.2. Its value becomes 2.2. If we attempt to add a number to x when x='roast beef' then we get an error. Those are the pros and cons of typeless variables. If x is uninitialized, then ARexx sets its value to the *upper* case value of its name, X (Simple tokens may be uninitialized at the start of the program or they may be uninitialized via the DROP instruction.).

Clauses and Expressions

Tokens are grouped together to form clauses. There are five kinds of clauses. It takes no more than two tokens to determine the class of any clause. The types of clauses are "null," "label," "assignment," "instruction," and "command." Blank lines and comment tokens are null clauses because they don't do anything. Label clauses are symbols followed immediately by a colon ":", and act like place markers. We looked at an assignment clause above. Command clauses are how we remotely control other programs. Commands are "expressions" which cannot be classified by the ARexx interpreter as any of the other types of clauses. A command is sent to the "current host address" much like the post office sends letters to addresses. The postman doesn't open or read your mail, he only sees that the letter gets to you and that your reply goes back to the sender.

Expressions are groupings of strings, symbols, operators, and parentheses. ARexx parses (reads and divides up) any line of code from left to right. It resolves the symbols by obtaining values for all of them, either the upper case name for the symbol (if uninitialized), the assigned value from the symbol table, fixed symbol values (just the name of the symbol itself), values for functions (themselves a special type of expression), results of operators acting on two or more values within the expression, and so on until a value for the entire expression is evaluated. Expressions are powerful, flexible and high level.

Arrays

We say "array" to denote what is really *two* things. ARexx nomenclature eliminates ambiguity. We'll use "array" to denote in general the combination of a stem and its associated compound symbols. Lets clarify. The == operator means "exactly equivalent to".

Equivalents

array == stem & all associated compound symbols
array name == stem
array element == some particular compound symbol
array index(es) == node(s)

What is an array? Think of this article. It has lines, words on each line, and letters in each word. Define a stem to be ARTICLE. (noting that stems have exactly one period (.) as a last character). There are lines, words, and letters in our three-dimensional array. The ARexx syntax is to write the array like this:

Article.lines.words.letters
or
Article.25.6.5

Lines, words, and letters; 25, 6, and 5 are all called "nodes," and may be simple or fixed symbols, but *not* a compound symbol. We may use Lines to be a simple token (variable) to count lines, or we may speak explicitly of line 25. Let's say Line 25 reads as follows:

"A horse, a horse! My kingdom for a horse!"

Then Article.25.6.5 = 'd' the 5th letter in the 6th word, "kingdom". Now suppose that there are *only* four words on Line 25, "A horse, a horse!", so we cannot speak of word 6, much less of letter 5 of word 6. What happens then? Remember uninitialized symbols? That goes for compound symbols as well. Our compound symbol becomes:

```
Article.25.6.5 = 'ARTICLE.25.6.5'
```

or the upper-case value of the uninitialized compound symbol. Suppose the simple symbols have values of Lines=25, Words=6, and Letters=5. In the first sentence (including "kingdom"), the value is

```
Article.Lines.Words.Letters='d'
```

and in the second case (without "kingdom") the result is

```
Article.Lines.Words.Letters='ARTICLE.LINES.WORDS.LETTERS'
```

again for the reason the compound symbol is uninitialized.

Initializing a Stem.

One powerful feature of ARexx's array processing is its ability to initialize *all* and *every* compound symbol token to some value with only one assignment clause! We can set every element of the array named "LISTED." equal to zero with only one line:

```
LISTED.=0
```

Now, every element of LISTED. is 0 no matter what dimension or level!

A Useful Project

The example programs demonstrate very well the use of multi-dimensional arrays, random access arrays (unique to ARexx), and the extremely powerful REXX Rainbow Stem/Array function called AssignArray(). The task is simple in concept: We need a program to take an ASCII file and make an alphabetized list of all words and numbers in it, *without* duplicates and without attached punctuation. First we'll make a main program call an interior as well as an exterior sort function to accomplish the task. Next we'll code a single multi-dimensional array program with everything in one complex program. Finally we'll divide this one into a main program calling a generic exterior sort routine capable of sorting *any single dimensional array* by using the Stem/Array function AssignArray(). Feed this external function *any* stem, a count, and a starting number, and after it sorts the entire array, we get the sorted array back in the calling program directly!

REXX Rainbow Stem/Array Does the Impossible

It was *impossible* to transfer intact arrays to and from external programs before the REXX Rainbow Library came along. Normally, ARexx can pass arrays directly only to interior procedures. With AssignArray() you may pass entire arrays back and forth between more than one nested level! This AssignArray() function is a very slick, very worthwhile feature to have in your ARexx bag of tricks. If you send your REXX Rainbow-Library-coded program to someone who lacks it, the program won't work, but if you *compile* your program with *RexxPlus* (by Dineen Edwards) it will export OK.

Passing Arrays the Hard Way

I have come up with several workarounds to process arrays between a main and an exterior program, as you may see in our first example from *The ARexx Cookbook*. It uses arrays minimally. If you turn your file into a long string, pass it to the exterior program, parse it (divide it) into compound symbol tokens, process them, put them back into a long string, and finally return the string to the calling program where it can be parsed *again* into compound symbols, (whew!) you can mimic the passing of arrays. UNIword.rexx (calling Sortword.rexx) works this way.

Random Access Arrays

ARexx arrays are in effect content-addressable data structures. An array may be indexed by strings and not just numbers. The *REXX Rainbow Library* manual calls these "random access" arrays. The examples here use the unique capability of ARexx to perform random access in arrays indexed by nodes that are not numbers! We simply initialize the array LISTED.=0 and then parse a word from the current line. We call this simple symbol token WORD to reference what it is. Now we obtain LISTED.WORD and test to see if it's equal to 1. If it is, we know we have found this word before, and we ITERATE (jump to the end of the loop without incrementing our counter). If LISTED.WORD=0 (NOT listed—remember? All elements start off as 0), then we use an assignment clause to set LISTED.WORD=1 so that the next time we'll iterate the loop. Note how a non-numeric node is used to generate a Boolean (Yes or No; 1 or 0) array of values, indexed by the non-numeric nodes!

An Advanced Example

Our second example uses two-dimensional arrays. LINE. is a stem for a single dimensional array, and WORD. is a stem for a two-dimensional array indexed both by line number and word number. In UNIarray.rexx, i counts lines, j counts words in line.i, and m counts the number of words without counting duplicates. The heart of the array building is the keyword instruction:

```
PARSE VAR line.i word.i.j line.i
```

Multi-dimensional arrays are simply nested DO loops: We count a line on the outer loop. In the inner loop, we count the words in that line. Then out to the outer loop to count another line. As an exercise, study the DO FOREVER loop logic that removes punctuation. The logic here is improved over what's in *The ARexx Cookbook* in Appendix A and on pages 5-23. If you own my book, you may want to annotate your copy.

The stem LIST. combined with the nodes from 1 to listlength=m-1 is the list of unsorted unique words. Then we use the complex Shell sort which we won't discuss here. You can read about it in *AC* V6.9 and 6.10. At the end of the Shell sort, another DO loop SAYs the list to the console.

Using the REXX Rainbow Library

The last example is two programs which replace UNIarray.rexx. UNIStemArray.rexx does everything but sort. ShellSortStemArray.rexx becomes a universal sort program that will accept any array from any program and AssignArray() the sorted LIST. array back to the calling main program. The main program implements a simple exterior function call, passing as arguments the STEM of the array, its COUNT m, and finally where to START.

In ShellSortStemArray.rexx we see two calls to the AssignArray() function. It requires six arguments, separated by commas. Two obvious pieces of information are the COUNT and the START arguments. We have to account for Assign TO and Assign FROM information. The TO arguments come first: the NEST LEVEL number and the STEM name of the Assign TO array. Next, the STEM name of the Assign FROM array followed by its NEST LEVEL. What is NEST LEVEL? A 0 means the array in question is in *this* program; a 1 means the array is one level back in the calling program; a 2 means that the array is in the program which called the program which called *this* one, etc. You may count more or less than a whole array. Uninitialized compound symbol values (upper case names) fill in any blanks. Here, we count arrays entirely.

The names of the arrays and their levels in the argument order of the first AssignArray() and the second one are reversed. First, we assign FROM level 1 (the other program, UNIStemArray.rexx) TO this program's LINE. array on LEVEL 0. When finished, we assign FROM level 0 TO level 1 to put LINE. array back into the original STEM. array.

The *REXX Rainbow Library Stem/Array* Volume contains functions to add, subtract, divide, and perform math, trig, string, and conversion functions on single dimensional arrays. It is a powerful new addition to your ARexx tool kit.

Listing One

```
/* Uniword.rexx Program.This removes duplicate words from a string, and  */
/* shows the use of a compound variable (LISTED.) which is indexed by    */
/* arbitrary data (words).  An external function sorts alphabetically.   */
/* Copyright 1992, 1993 by Merrill Callaway */
/* Tells program to look for result variable from external calls.   */

/* Input section */
PARSE UPPER ARG infile
IF infile = '' THEN DO
   SAY 'Input text filename and path: '
   PARSE PULL infile
   END
RC=OPEN('textfile',infile,'READ')
IF ~RC THEN DO
   SAY 'File cannot be opened. '
   EXIT 20
   END

/* Make a large string out of the file */
list=''
DO WHILE ~EOF('textfile')
  line=READLN('textfile')
  list=list line
  END
SAY list
SAY

newlist=Unique(list)
SAY newlist
SAY

CALL sortword.rexx newlist
/* A CALL to an external function sortword.rexx. Its argument: newlist */
sortout=result
/* result is a special variable in which the data is returned from the */
/* external function sortword.rexx                                     */

SAY sortout

EXIT 0



/* An example of an interior function, called a procedure follows...*/
Unique: PROCEDURE
  PARSE UPPER ARG wordlist
  LISTED.=0          /* Shows all possible words as new.              */
  outlist=''         /* Initializes the output list                   */
  DO WHILE wordlist ~='' /* Loop while we have data.                  */
     /* Split WORDLIST into first word and remainder.                 */
     PARSE VAR wordlist word wordlist

     /* Get rid of punctuation at end and beginning of words. */
     /* NOTE this is an improvement over the book's listing.  */
     DO FOREVER
        IF DATATYPE(word,'N') THEN LEAVE
        IF ~DATATYPE(RIGHT(word,1),MIXED) THEN DO
           IF LENGTH(word)>1 THEN word=LEFT(word,LENGTH(word)-1)
            ELSE LEAVE
            END
        IF ~DATATYPE(LEFT(word,1),MIXED) THEN DO
           IF LENGTH(word)>1 THEN word=RIGHT(word,LENGTH(word)-1)
            ELSE LEAVE
            END
        IF DATATYPE(LEFT(word,1),MIXED)&DATATYPE(RIGHT(word,1),MIXED),
            THEN LEAVE
            IF LENGTH(word)=0 THEN LEAVE
            END


     IF word='' THEN ITERATE
     IF LISTED.word THEN ITERATE    /* Loop if had word before.        */
     LISTED.word=1              /* Remember we have had this word now. */
     IF outlist='' THEN sp=''
     ELSE sp=',' /* Put a comma between words in our list              */
     outlist=outlist||sp||word      /* Add word to output list.        */
     END
  RETURN outlist                 /* Finally return the result.        */
```

Listing Two

```
/********* SECTION ONE: INPUT THE ARGUMENT MAKE THE ARRAY **********/
/* Copyright 1992, 1993 by Merrill Callaway */
/* The Shell Sort sortword.rexx */
PARSE ARG stat     /* Bring in the line of data to sort */
m=1        /* Steps 3- 10 make an array of data (list.) */
DO WHILE stat ~=''
   PARSE VAR stat list.m','stat      /* Cut up into items */
/* An example of parsing on a symbol, in this case ','.          */
/* The VARiable stat is cut up into an array list.m              */
/* Each time through the loop the next word is put into array.  */
   m=m+1       /* increment the array index m.                  */
   END
   m=m-1       /* Adjust total number of unique words    */
SAY ''
SAY 'Sorting 'm 'unique words ...'

/*****************************************************************/
/********* SECTION TWO: THE SHELLSORT OF ARRAY 'LIST.' ************/
/* From here until end is a good sort routine. See text, figures.  */
listlength=m
span = 1
DO WHILE (span < listlength); span = span * 2; END
DO WHILE (span > 1)
   span = span % 2
   node = listlength - span
   DO scan = 1 TO node
      nextnode = scan + span
      IF list.scan > list.nextnode THEN
         DO
         store = list.nextnode
         list.nextnode = list.scan

         /* The inner nested bubpos loop */
         DO bubpos = scan-span TO 1 BY -span WHILE (store < list.bubpos)
            nextnode = bubpos + span
            list.nextnode = list.bubpos
            END bubpos
         bubpos = bubpos + span
         list.bubpos = store
         END
      END scan
END
/* End of sort routine, output follows...*/

/*****************************************************************/
/********* SECTION THREE: THE OUTPUT AND RETURN TO CALLER **********/
/* This block reconstructs a line to return to caller...*/
sortout=''
DO i=1 TO listlength

/* A loop to reconstruct the list, now in alphabetic order.       */
/* Each time through, the variable sortout is increased by a word */
/* until all the words are rearranged in the final sortout list   */

  sortout = sortout||list.i' '
  END

EXIT sortout  /* The string sortout returned to caller... */
/*****************************************************************/
```

(continued on page 78)

Design & Dingbats

by Dan Weiss

How can a creative layout spark up your newsletter or publication?

In the last article we covered one of the fundamental building blocks of publishing, fonts. Now let's take a look at some other facets of design. Since it is easier to learn by doing, we will start a newsletter as an example project and continue it in following articles. One of the keys to an effective newsletter is giving it an interesting and professional layout, so the first element of newsletter design we will look at is called the five-column layout.

Five-Column Layout

Many page-layout programs give you the ability to layout columns of the same size equally spread across the page. This is great most of the time. But sometimes you may want to create an asymmetrical layout. To do this, have your layout program create five columns. In this case we will design the page for a single-sided layout; later we will look into double-sided layouts. In *PageStream* you would use the Create Columns command.

Now you have five columns across your page. This makes for a very busy page, and very small columns. What we will do now is reduce this to three columns. Using the pointer tool, stretch the second column from the left so that it is as wide as the second and third columns combined. Do the same for the fourth column so that it extends to the right edge of the last column. Next delete the third and last column from the left. What we are left with are three columns: one narrow column on

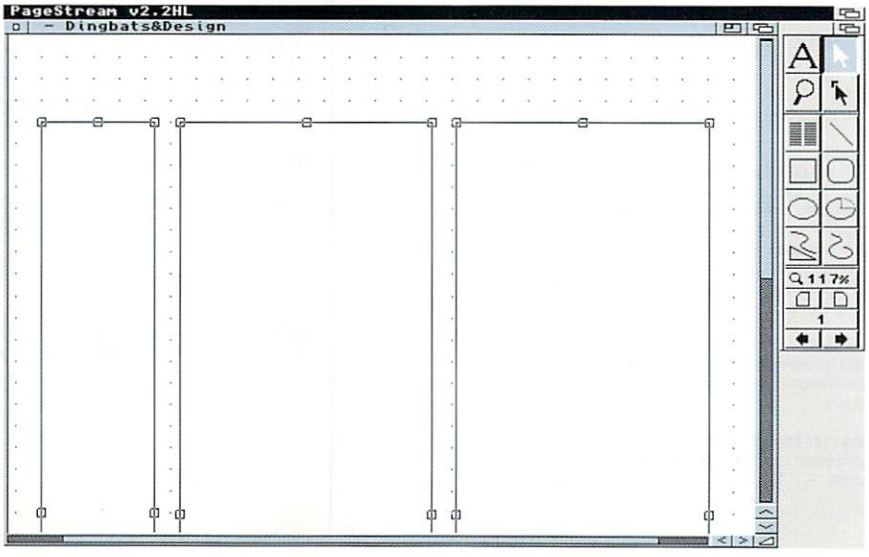
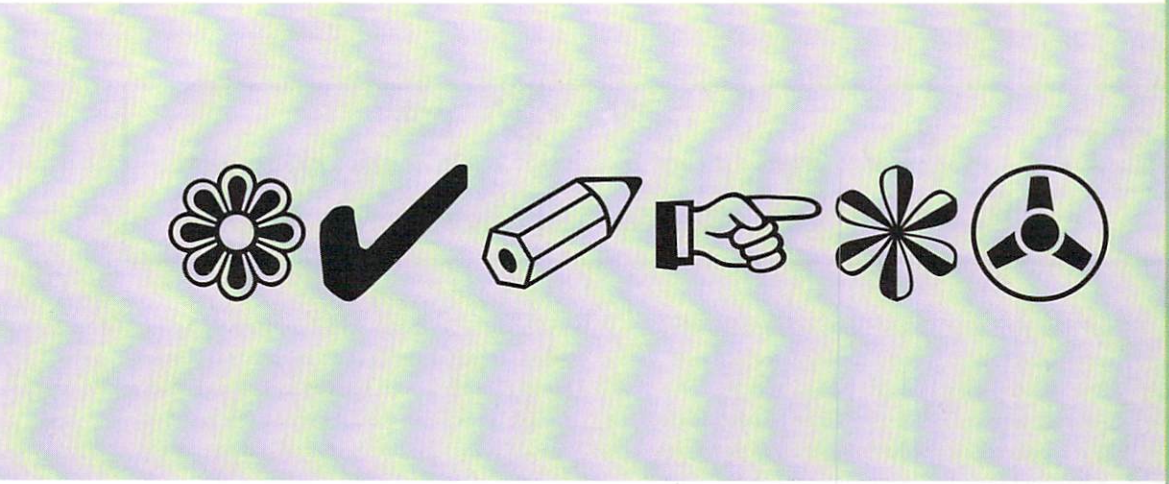


Figure 1.



the left and two wider columns. (Fig. 1) The two wide columns are well suited for articles, while the narrow column is good for special information. In the case of this project we will use the narrow column for the table of contents and a teaser of an inside article.

Just Teasing

A teaser is a bit of a description or article quote that is designed to draw the reader into the newsletter. It is best of course to choose the most provocative quote or description you can to encourage the reader to dive in. Starting an article on the first page is also a powerful way to draw the reader in. Some publications take this so far as to start an article on the first page, then continue it at the very end of the publication to force the reader to at least thumb through the issue. You can also use a teaser to make the overall newsletter seem more exciting.

Dingbats and Design

But before we tease anyone, we must first title our publication and layout its logo. The title for our publication is *Dingbats and Design*. Dingbats are symbols used by printers and publishers to accent the layout. A common use of a dingbat is to place it at the end of articles to let readers know that they have reached the end of the article. In some magazines it is a small version of the logo, in others it is a stylized version of the publication's initials. In the case of *Dingbats and Design* we will use the colophon symbol. Dingbats are also used for placing symbols of telephones near phone numbers or scissors near coupon cut lines. The whole idea is that the dingbat is used to add "color" to the layout of the page. Perhaps a better, but less used term for dingbat, is ornament. This fits well with the traditional idea that printers would use these specialized symbols to "dress up" the text by introducing an illustration.

Back to the logo. We need to show the serious as well as the playful side of our publication. To do this, we will use a very serious serif font for the

➛

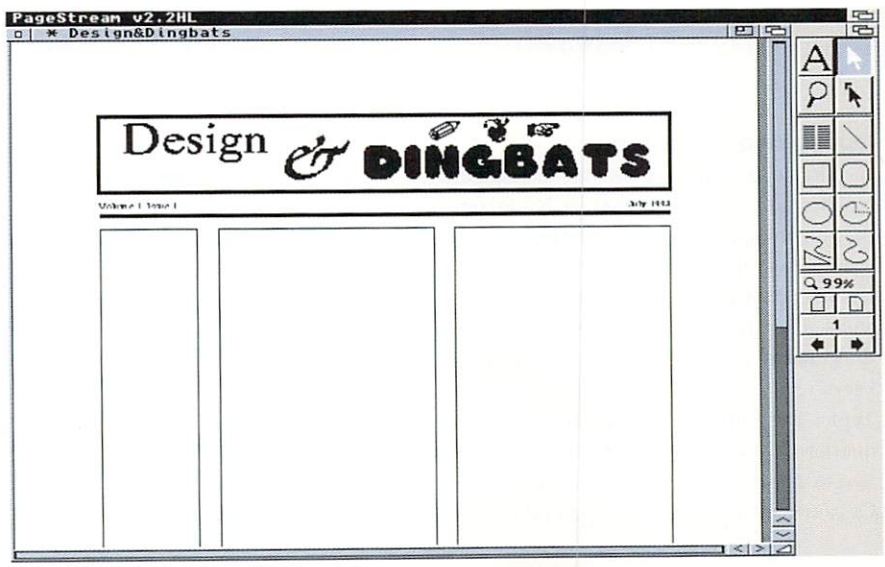


Figure 2.

Does it *really* make a difference how I lay out my text?

Design & DINGBATS

A teaser is an article quote that is designed to draw the reader into the newsletter.

word Design, and a looser sans serif font for the word Dingbats. To accent the logo, we will use dingbats: the colophon, the pencil, and the pointing finger. The logo will then be surrounded by a 2-point-thick border to set it off from the rest of the publication. The logo is about an inch tall and stretches from the left edge of the first column to the right edge of the last column. (Fig.2) The top of the logo will be aligned with the top of our columns. Once the logo is placed we should move the top of the columns down so that they are below the logo by double our gutter distance. Use edit coordinates to make sure that all columns have the same height and start at the same distance down the page.

point body type, then a wider gutter will be needed. To make the best visual use of a gutter in a multi-column layout such as this, text should be justified, or as some would say, double justified. The idea is that the text is spaced out so that the first letter of the first word in a line is always on the left edge of the column and the last letter of the last word, or the hyphen in that word is on the right edge of the column. This gives the column a strong visual edge and makes the page look cleaner. Now many of you may have heard that it is easier to read text that only lines up on the left edge. This is known as left justified or ragged right, for the jagged appearance of the right edge. Ragged right is good when you only have a single

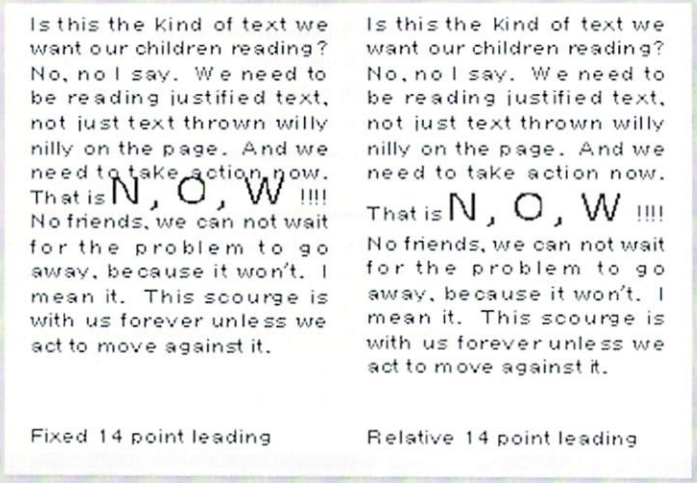


Figure 3.

Gutters and Justification

In the last paragraph we mentioned gutters. No these are not the kind that catch rain, rather they are the spaces between columns. The gutter space is very important for maintaining the legibility of your document. If the gutter is too small, all of the text will appear to run together. If the gutter is too large, it will create a distracting bar of white space running down your page. Typically a gutter is in the one-eighth- to one-quarter-inch range. It should be based in proportion to the size of the work you are doing. Obviously if you are designing a poster with 72-

column of text. But when you are using multiple columns the visual appearance of justified text is much easier on the eye. Compare a newspaper to a book. The book in a single-column format is left justified, whereas the newspaper with a multi-column format is double justified. In the end, there has been no compelling evidence presented that left justified text is easier to read.

When and What

Before we start placing the actual articles, there is another piece of the layout we need to take care of, the date line. With any publication it is

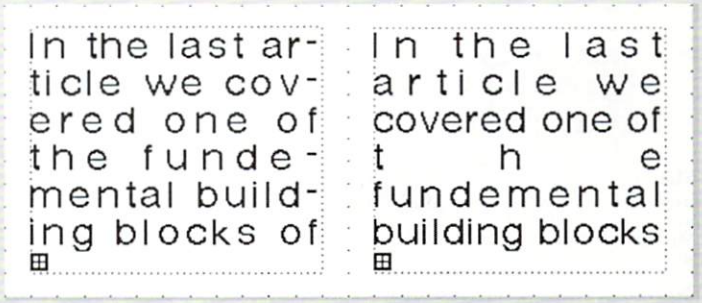


Figure 4.

customary to state approximately when the issue is released and what number it is. There are many different schemes. Sometimes simply the date, July 1776, is used. Sometimes a date, a number, and a volume is used. The volume usually runs from the first of the year until the end of the year, though not always. The reason for a volume number is to include special issues that do not follow the normal, weekly, monthly, or quarterly schedule. For *Dingbats and Design* we will use a date, volume, and number format. So this issue is July 1993, Volume 1, Issue 1.

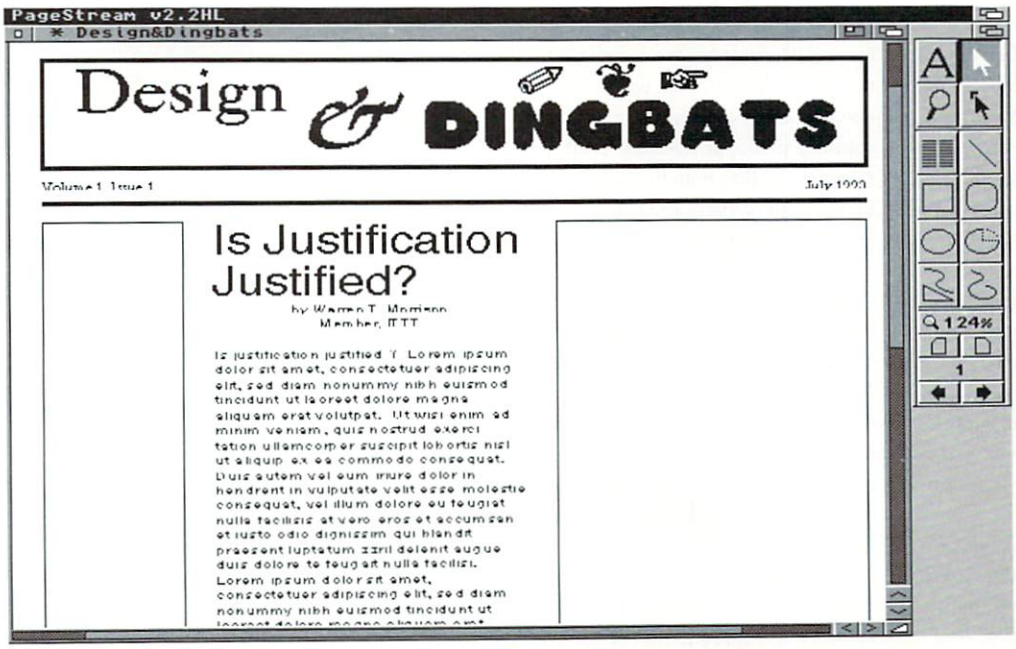
The date information is very useful to readers, especially when trying to find a particular issue or organizing their collection. The numbering system reminds the users of issues that are outside the normal schedule by the jump in numbers between issues. To layout the dateline for our publications, we will use 9-point type with the volume and number left justified and the date right justified.

This line is then accented by a 2-point rule (line) underneath, and placed in the space between the logo and the top of the columns. The bottom of the logo forms a natural rule to complement the underlying one. Now on to the articles.

Filling in

The first article is called "Is Justification Justified?" To give this article the greatest emphasis, the headline will be laid out in the largest size of the body type that will fit "Is Justification" in the column on one line and "Justified" on the next. We do not want to use hyphenation in the headline as it detracts from the power of the headline. Directly under the headline we want to give the author credit by placing a byline. The byline simply states who the author is, and possibly what organization he or she is with. The byline is typically in a smaller point size than the body, centered, and possibly in italics. In our case the author is Warren T. Morrison, and he is ➔

To give an article greatest emphasis, the headline is laid out in the largest type size.





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with the International Typographers Topical Triads, or I triple T as it is known to its members. Warren insists we add this to his byline so we do.

Now that we have passed the title and the byline we need to start loading in the text of the article. In "the business," this text is known as copy. From this we get the position of copy editor. A copy editor checks over copy, like this article, for obvious mistakes or problems. They would not be able to correct technical content, but they would be in the position to tell you when you should rewrite a phrase or make yourself less ambiguous. Loading the copy is a simple operation for any of the page-layout programs today. After we have filled the first column we will want to route it to other pages, but not just yet. First we will want to justify the text as we discussed above. Additionally we will want to set the point size and leading for the copy.

Getting the Lead In

Leading, pronounced led-ing, is the name for the space between lines of text. This comes from the practice of inserting thin slabs of lead between lines of lead type in old printing. In today's typography we have two kinds of leading, fixed and relative. (Fig. 3) Fixed leading sets a standard distance—each line will be below the next. This is independent of the type on the line. For instance, 14 points of fixed leading will leave a lot of space between lines of 10-point type, while it will cause lines of 24-point type to overlap. One of the big advantages of fixed leading is that it allows side-by-side text in adjoining columns to line up visually. Nothing is more distracting than two columns of text that are out of sync. The result is a ragged and sloppy look.

The second form of leading is relative. Relative leading adds a given amount of space between each line based on the point size of the text. Relative leading permits you to open up or tighten down a column of text. It also makes it easy to fit a block of text exactly in a given space. But beware, do not layout two columns side by side that have different leading. The results will be very jarring.

Back to the column. We will use 10-point type with 11-point fixed leading. This gives a bit of space to the layout without eating up too much space. If we have enough space, try is to use 11-point type with 12-point leading. Adding a point does not take up that much more space, but can give us an easier to read text since 11 points is only 10% larger that 10 points. The difference can be amazing. In our case, though, we will stick to 10-point type.

Now that we have the copy in place, we can see that there are some large holes in the text. A hole is the result of a long word wrapping to the next line. The way to improve the look of the column, save considerable space, and give an air of professionalism is to hyphenate words. (Fig. 4) Luckily for us, modern publishing packages can automatically hyphenate a block of copy. This is usually accomplished by a system that can automatically hyphenate most words and provide a dictionary showing how to hyphenate special words. Hyphenation is more than simply breaking words where there is a syllable break. It is also a matter of choosing when to break and not break. A good example is the word atypical. If the word is broken at the first syllable it ends up being a- and typical. If you're reading quickly, the a- could be missed and now something atypical is typical. Breaking the word into atyp- and ical would be a much better choice. Certain large or technology-specific words may not be handled well by automatic hyphenation routines either.

So For Now

So far we have created our basic layout using the five-column system. We have placed the logo and flowed some body text. In the process we learned about gutters, leading, dingbats, justification, teasers, rules, date lines, and bylines. In the next article we will cover more aspects of classic typography and continue with the first issue of *Dingbats and Design*.

•AC•

Please Write to:
Dan Weiss
c/o Amazing Computing
P.O. Box 2140
Fall River, MA 02722-2140

Learning C on the Amiga: Where to Begin

by Douglas Stockman

I BECAME HOOKED on the Amiga and its proprietary hardware and operating system shortly after its introduction. The sheer graphics power that programs like *DeluxePaint* displayed on an Amiga 1000 was enough to make anyone want one. Seeing that power also made me want to program on the Amiga so that I could harness its capabilities. Unfortunately, accessing that graphics potential was not easy. Over a number of years and by following a somewhat tortuous path, I have finally acquired some proficiency programming C on the Amiga. Hopefully, by sharing some of what I have learned, this path to Amiga programming will be easier for others.

C is touted as a portable language. This means that a program created on one platform (e.g. *UNIX*) is easily altered to run on another platform (e.g. *AmigaDOS*). To some extent, this is true, but for most applications easy portability is not possible. It is best to think of learning C on the Amiga as learning two separate languages. The most basic and portable of the two languages is *ANSI C*. A C program written using ANSI C is generally very portable. The "second language" refers to all the Amiga-specific commands that must be learned if the programmer wants to use Amiga functions such as menus, requesters, and graphics. A program written using only ANSI C is boring, but very portable. Still, ANSI C forms the basis of Amiga programs.

My early attempts at C involved trying to learn these two "languages" simultaneously. The result was an overwhelmed and frustrated would-be Amiga C programmer. I was no closer to controlling my Amiga than when I had started. After picking myself and my ego up, I chose to simplify my life by first learning ANSI C.

To learn ANSI C, begin simply. Creating a 3 to 5-line C program that works is more enjoyable than spending 10 hours trying to debug a 200-line program that continually crashes the computer. Having a specific project in mind as an end goal helps keep one motivated. Almost any program will be composed of many smaller logical chunks of code (functions) that perform only one purpose. Learn C programming by coding the most trivial functions of a larger program. Those first functions can be improved and optimized later as more is learned.

The Essentials

Programming in C requires an editor and a C compiler/linker. The process of creating a C program involves entering code, or C commands, into an editor. The C code must be saved as an ASCII file. The compiler is then given the name of the ASCII file and executed. The C compiler looks at the code. If there are syntax errors, the compiler will spew out warning or error messages which will have to be corrected before a working program can be created. If there are no errors, the C compiler/linker will create an executable program (Figure 1). Most compiler packages guide the new user in creating that first C program.

Editors

An editor is essential to creating ASCII files that can be fed into the compiler. The only real requirement of an editor is that it be able to save the entered text as an ASCII file. This means even a word processor can serve as an editor as long as it can output text as an ASCII file.

Most "real" programmers find a dedicated editor more appropriate than a word processor. For beginning programmers, the idea of spending a fair amount of money on something they may never take a liking to is not appealing. Fortunately, the Amiga comes with two editors that can be used to create simple C code: Ed, and memacs (microemacs). More powerful editors can be obtained/purchased later if the user finds C programming enjoyable. Each editor has its own set of commands that must be learned.

Example Editors:

Ed
memacs
GNUmacs - An emacs editor produced by the GNU foundation
DME - Matt Dillon's editor
SE - Bundled with SAS/C
Cygnus Ed
Turbo Text
Uedit - Rick Stiles freely distributable editor (FF 768-770)

(continued on page 81)

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THE VIDEO SLOT!

by Frank McMahon

With the introduction of the AGA chipset for the 4000/1200 and the continued advances to the system software in the form of Workbench 3.0, there has never been a better time for the Amiga video producer. However, with so many new features such as mode promotion, coercion, super hi-res, and HAM-8 there can often be more questions than answers. In this and future editions of The Video Slot, I'll try to break down the various features and highlight what these exciting new advances actually are. I've had my Amiga 4000 less than a month, but I can already say that while previous models have been a steady improvement, this model is truly in a class by itself. It faithfully remains as downward compatible as possible while featuring new graphic modes unavailable on any other platform without expensive add-on cards.

HAM-8

What exactly is HAM-8? Similar to traditional HAM mode, it allows the use of up to 256,000 colors on-screen from a palette of 16 million (24-bit). The amount of colors is not really as important as the palette it is derived from. Other computer platforms feature 32,000 or 256,000 colors but only from a 16- or 18-bit palette, which means there is a greater jump from color to color, noticeable by graininess in gradient spreads. This provides good color but not a true color palette. The reason the other platforms use 16- or 18-bit is to increase the speed of graphics data passing through the machine's architecture. The AGA chipset can afford the higher color bandwidth because it has a true 32-bit data path to buzz through as opposed to other machines with 8- or 16-bit paths. Think of it as a highway with 32 lanes as opposed to 8. Pretty good traffic flow,



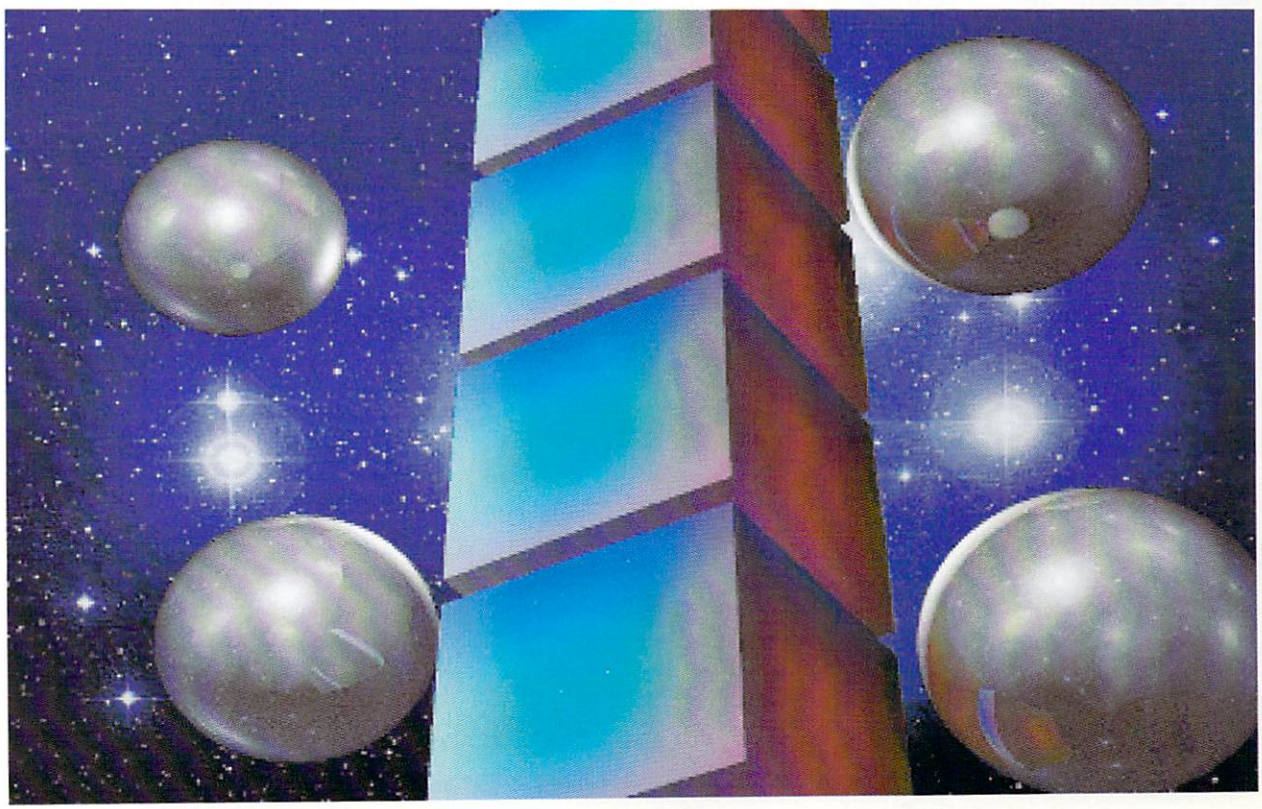
Image of a museum piece created by author at 768x482 resolution and displayed in AGA HAM-8 mode.

GET GRAPHIC!

What Can the New AGA Graphics Modes Do For You?

huh. HAM-8 benefits by being very speedy for realistic animation. Traditional HAM has only 16 base colors. This means that any color beyond the first 16 could fringe due to the Hold-and-Modify algorithm; fringing is caused by contrasting colors that are right next to one another. HAM-8 combats the fringing by first providing 64 base colors as opposed to 16 and also by working in any AGA resolution such as 1280 x 400, super hi-res Laced. This eliminates noticeable fringing and once sent to composite video the fringing is not detectable.

Recently I was contacted by 20th Century Fox to create some Amiga graphics for use in an upcoming film titled "Ghost in the Machine". The production manager on the film needed basic computer art for the office set of a group of computer hackers. She had seen some images that I had done in *Amazing Computing*. For that project I worked in 24-bit and for this month's article I converted some of the images to HAM-8. I was amazed after rendering them using *Art Department Pro* in HAM-8 mode how similar they were to the 24-bit versions. While the various 24-bit boards available are impressive in their own right, a stock Amiga 4000 with HAM-8 can easily create photo-realistic images with no additional hardware. What programs support HAM-8? As far as animation programs *Caligari 24* by Octree Software, *Imagine* by Impulse, and *Aladdin* by Adspec Programming are just some of the 3-D software available that take advantage of the new modes. As of this writing, all are officially shipping their special AGA versions with the exception of Imagine. One program that has supported HAM-8 for most of the past year has been ASDG's *Art Department Pro*. In fact when you boot up the version you have been using for the past year in an AGA machine you'll be in for a few surprises. First the palette editor which traditionally showed an approxima-



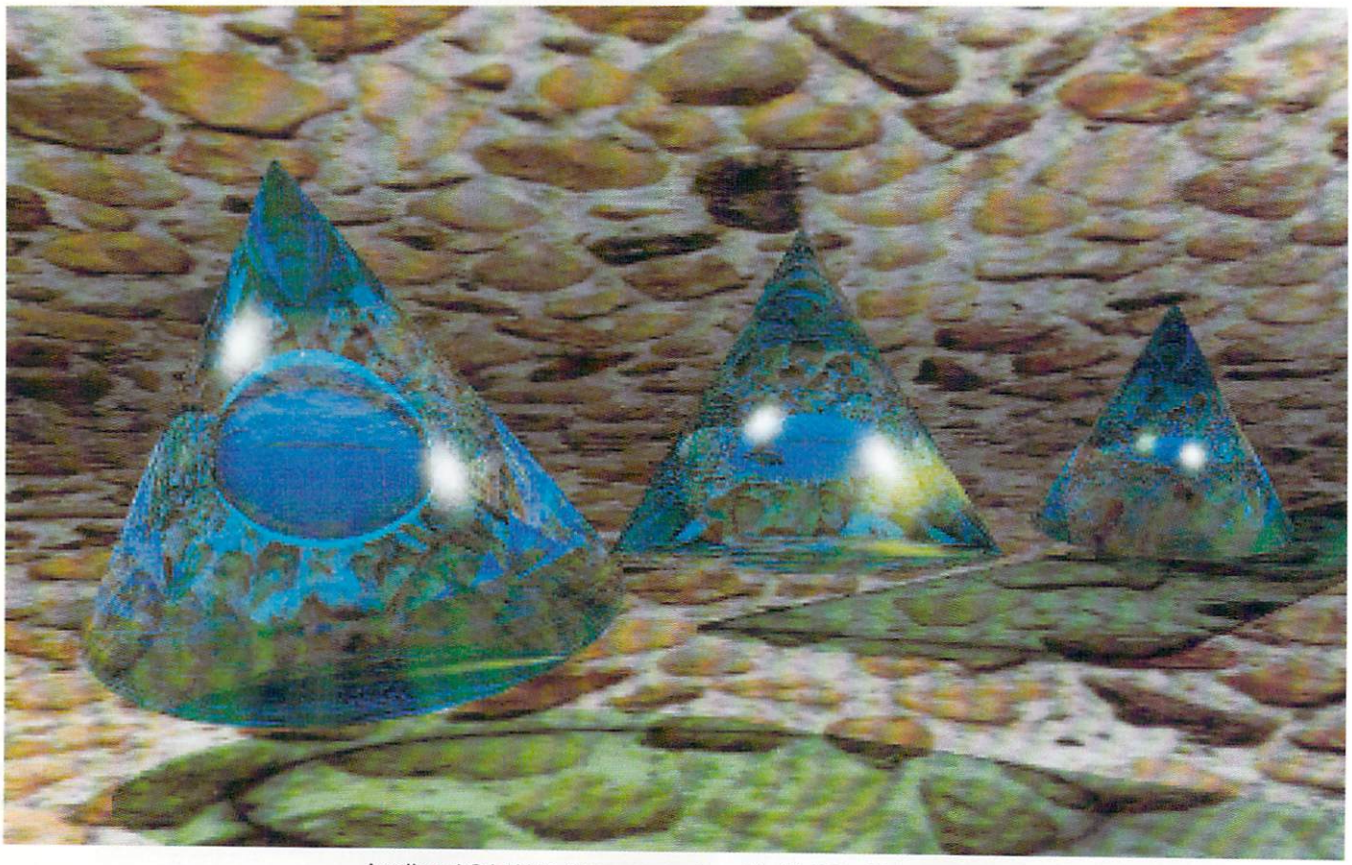
HAM-8 space scene image rendered in Imagine featuring environmental mapping.

tion of colors from a 4096 color palette now features a full 256 colors out of 16 million. Also added to hi-res and lo-res rendering there appears an additional toggle for super hi-res. In addition to NTSC and PAL, a VGA option pops up which allows you to render and display images on a VGA monitor in standard VGA resolutions. There is a new and improved version of Art Department Pro slated to ship soon—it should be out when this issue is on the stands—with even more features such as 256-shade grey-scale in WYSIWYG modes like crop and text visual.

As mentioned before, an added bonus with HAM-8 is the wide variety of resolutions available. Traditional HAM was restricted to lo-res and lo-res interlace. HAM-8 can be used in hi-res in a variety of modes and resolutions such as: super hi-res–1280x200, super hi-res laced–1280x400, productivity–640x480, productivity laced–640x800/640x960, super72 hi-res–400x300/800x300, and super72 hi-res laced–400x600,800x600. Adding overscan to any of these increases the resolution even more. There are even more graphic modes and more to come so if it seems as though it's going to be a tough choice for video work, don't worry. Most video users will continue to work in a 746x484 mode and some will move up to super hi-res at 1280x400+overscan. One advantage is that while other platforms have square pixels on their display and use resolutions such as 640x480 and 800x600, now these images can be directly imported to the Amiga at these exact resolutions; normally scaling with a program such as AdPro would be necessary to view. Also many PC images are in 256 color mode which the AGA graphic chips support. We'll soon see programs that view GIF and BMP pics directly without converting to HAM mode or resizing. And of course HAM-8 will make viewing 24-bit images such as Targa files easier than ever. The additional of CrossDos to Workbench 3.0, which allows direct reading of hi-density PC disks, is an added bonus for cross-platform image work.

Mode Promotion

As with the 3000, the 4000 and 1200 provide a flicker-free display, which is a great bonus for working with image processing, especially at higher resolutions. However, the 3000 had a built-in hardware device to eliminate flicker where the 4000 and 1200 do so by doubling scan lines though software. There is an option called mode promotion in Workbench 3.0 that accomplishes this feat. An adapter comes with the 4000 that allows use of a standard multisync VGA monitor for crisp displays. Now here's where it starts to get tricky. Most VGA monitors scan at 31.5KHz; however, most Amiga modes, including all previous Amiga models, scan at 15.74KHz, allowing syncronization to video. If you open up a 15.74KHz screen on a 31.5KHz monitor, it will lose sync and provide a jumbled display. There are a couple of solutions to this dilemma. First, you could use your standard 1084s Amiga monitor and forget about flicker-free output. You would still have to accept flicker at higher resolution modes that feature interlace, although with images at 250,000 colors, it is not that noticeable. Second, you could use a VGA monitor and turn on mode promotion. This doubles the 15.74KHz display and simulates a 31.5KHz output for rock-solid output. This is the cheapest method because VGA monitors are not that expensive and generally have a higher dot-pitch (.28 as opposed to the 1084's .42) for a sharper display. The third option is to buy a multisync monitor that scans starting at 15.74KHz to 31.5KHz and up. That way you'd have all the graphic modes flicker-free or laced at your disposal.



Another AGA HAM-8 image rendered in HI-RES with Imagine.

Many new 4000/1200 users make the mistake of purchasing a new monitor only to find out that when they open a lo-res 15.74KHz screen the sync is lost. Mode protection is a neat trick but far from fool-proof. First of all it doesn't work with all VGA monitors; however, it does work fine on most. Also I found when I boot up *Deluxe Paint IV* (non-AGA) with my multisync monitor with mode promotion activated, the sync is lost when the initial lo-res "screen-mode" screen comes up. Also when purchasing, make note of the resolutions of the VGA monitor; chances are an inexpensive model may not support the full choice of higher Amiga resolutions. Hardly any VGA monitors have built-in speakers, much less stereo ones, so an additional speaker system may be needed as well. Also most VGA monitors have a black border around the outside of the picture, so even in overscan you may still see a border. One option is to get a monitor that let's you adjust the picture size or has an overscan switch. Another option is to get use to it; it's not distracting after a week or so of use.

Finally with so many graphic modes, chances are your monitor will not support *all* of them. You don't *need* 20 graphic modes. Pick the ones you'll be using, jot down the scanning rate and resolution, and *then* go shopping for a monitor. The various modes are designed for a broad choice, not to force you into purchasing a $1000 monitor that covers them all.

Coercion

Another feature that causes confusion is coercion. When you are multitasking and have several screens open at the same time, you may very well have screens trying to scan at different frequencies. The coercion option controls the effects of having different screens open at the same time. It has options to avoid flicker, which keeps a background screen from becoming interlaced, and also to preserve the original screens colors. While it doesn't sound like much, it actually is very useful to have if you are working with multiple programs such as a paint and a 3-D package which run at differing resolutions. One nice program that comes with Workbench 3.0 is a utility called Multiview. It is a small program basically opening up as a directory window. As the name implies it lets you view multiple file formats. Everything from sound files to text files to animations to graphics. It fully supports HAM-8 (no surprise) and easily makes quick viewing of any file on your hard drive. There are also options to create a block of pictures and copy them to the clipboard as well as to search via specific file patterns. Defaults can be saved allowing the size, position, and location of the Multiview window. You can also set various tool types to control whether the file opens up on its own screen (a hi-res pic on a hi-res screen) or on a selected public screen.

Wave to IFF

This quick non-AGA note: a few months back we discussed using CDs featuring sound files from other platforms, specifically WAV sound files originating from Windows on a PC. I listed several CDs that featured WAV files, hoping eventually I would come across a WAV to IFF sound file converter. Well I have. Thanks to *AC* reader Steve Harper for the tip, there is an Amiga port of the "Soundtools Kit" available under the filename AMISOX.LHA. It was ported by David Champion from the original UNIX archive by Lance Norskog. David's Internet E-mail address is:



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dgc3@midway.uchicago.edu or champion@tira.unchicago.edu. It is available on some BBS systems including Steve's own called the Psionic Blue BBS at 801-798-3676. This information makes CDs an even more resourceful proposition.

That's it for this month. In future issues we'll explore more about the new AGA graphic modes and more specifically feature the new versions of popular programs that support it. The coming year will no doubt be the biggest graphics boon since the Video Toaster first appeared. Stay tuned.

•AC•

Please Write to:
Frank McMahon
c/o Amazing Computing
P.O. Box 2140
Fall River, MA 02722-2140



ROOMERS

by The Bandito

[These statements and projections presented in "Roomers" are rumors in the purest sense. The bits of information are gathered by a third-party source from whispers inside the industry. At press time, these rumors remain unconfirmed and are printed for entertainment value only. Accordingly, the staff and associates of Amazing Computing *cannot be held responsible for the reports made in this column. All comments, opinions, or any other expressed bias are strictly those of the author.]*

Euro Amiga

There's good news and bad news to report about the Amiga in Europe. The good news is that the A1200 has sold very well in Germany; initial returns indicate shipments sold out fast both there and in the UK. Initial sales in the U.S. are very promising; many dealers report they have units on backorder trying to fill the demand. Of course, it's too early to tell if sales will continue at this level, or taper off as enthusiasm dies down.

And now for the bad news: the Bandito hears that while new Amiga sales have been good over there, PC sales have been even better. And sales of the older Amiga models have slowed. The Amiga is losing ground rapidly in Europe; observers expect the PC format to overtake the Amiga as the number one machine in 1994, despite strong initial sales of the A1200. What's happening to the Amiga in Europe? A number of things, starting with drastically lower PC Clone prices. The Amiga has been the home computer of choice largely due to the low price and its graphics and sound performance. But now PC Clones can get pretty cheap, too, even though the cheap ones can't really compete with Amiga sound or animation. Part of it is a reflection of the U.S. game market, where all the newest games come out first for PC Clones, and more of them now never even make it to the Amiga. Second, the action gamers are going to Sega or Nintendo, which offer even lower prices than the Amiga and a broader selection of the popular hits from the arcades.

The Atari ST series is dead in Europe, as far as the software publishers are concerned; the Falcon is due to take over for Atari, but that will do no more than confirm Atari's place as a distant Number Three. What's all this going to mean? Well, there's still hope that the A1200 can hold the line for Amiga's market share in Europe, but it's going to be tough. We may see more European game makers concentrating on PC Clone games rather than Amiga games. Indeed, this is already happening. The PC Clone gamers tend toward less action titles and more role-playing or simulation type games, so the Europeans may even start to learn about that style of play. Change is the only thing you can depend on, isn't it?

New Macs, New Math

The Bandito has spotted some tough new competition for the Amiga lineup; this could be the greatest threat yet to our favorite computer. No, not that the hardware and software are better, but the price and the marketing are better. Who's doing this? Apple is the one. They've just released a slew of new Macintoshes with some pretty low prices. Of course, Apple is trying to compete with low PC clone prices, but this is serious competition for the new Amigas, too. These new Macs pretty well slay any of the old Amigas, at least as far as raw hardware for the dollar goes. Let's look at the direct competition. An Amiga 1200 with 4MB of RAM and an 80MB hard drive with a 1960 monitor will run you about $1500 or thereabouts. A Mac LC III with 4MB of RAM and an 80MB hard drive with monitor will be about $1500 street price. This means trouble for Commodore. As far as most consumers are concerned, the two machines will hit them about the same in the pocketbook. And of course the Macintosh will be sold in far more places and advertised more heavily. And the Macintosh offers software compatibility with the biggest names in the business (Microsoft, Lotus, Aldus), plus reasonable compatibility with MS-DOS file formats.

True, the Amiga has even better MS-DOS compatibility, at least as far as disk operations are concerned; it's built-in instead of an option. The Amiga has a more powerful operating system, more colors available standard, more screen resolutions, and animation that's orders of magnitude faster. On the other hand, the Macintosh LC III does have a 25MHz 68030 compared to the 14MHz 68020 of the A1200, and the LC III has a hi-density disk drive and a clock built in. (How did Commodore miss those items?) The Mac LC III also has a 32-bit data bus, a built-in networking port, a SCSI port, an audio-in port, and a socket for a 68882 math coprocessor.

The problem is that either most of the Amiga's advantages aren't important to most

users, or they are too difficult to explain. How many people really need fast animation or programmable screen resolutions? Can you make the differences between the Amiga's true multitasking OS and Apple's pseudo-multitasking OS obvious to the ordinary computer buyer? It's tough. On the other hand, Apple has some obvious advantages: enormous marketing budgets, widespread distribution, and incredible name recognition. The Bandito would love to have a quarter for every time the phrase "Omega? What's an Omega?" has been used in the Bandito's hearing. And the benefit of big software companies like Microsoft advertising products for their computers, too.

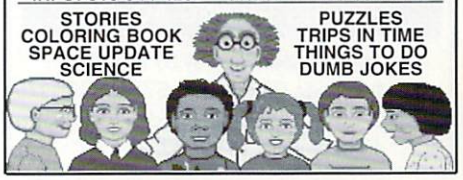
True, the A1200 can be used with an ordinary TV set and no hard drive at all, which brings the initial price down pretty low—currently, into the $600 range. And that's the only place the A1200 has a chance of surviving: at the low end of the price range. Apple doesn't really compete in the under $1000 range—not if you want little "extras" they sell you, like keyboards. Commodore has to push the machine out to the low-end home market, those folks who are so price-sensitive that $1500 is just too much to pay. But half of that they can handle (go on, melt that credit card!) and then plan to expand the system later on when they have the money. Commodore will have to work hard to bring down the price of the A1200 into the $500 street price range as soon as possible, hopefully with some nice basic software bundle. At that price, the A1200 can even compete effectively against the Clones.

A word about those marching Clones, by the way. While the prices seem staggeringly low, things aren't quite as they seem. Since to get even a semblance of the usability of an Amiga, you have to be running the Windoze "operating system," and that means you need plenty of horsepower. The Bandito uses the term operating system very loosely here, since Windoze is really a graphic shell for MS-DOS, which dates roughly from the Old Stone Age in computer years. Computer years are kind of like dog years, only at about 100- or 1000-1. Anyway, if you want to run Windoze at any speed faster than, say, a startled sloth, you'd better have at least a 33 MHz 80386; better make that a 486. And remember not to have too many colors on the screen at a time, either, and don't put the resolution too high. Oh, you want music? Drop in another $200 for a sound card that sounds like what the Amiga can put out with two voices tied behind its back. Animation? You could spend a grand or two on fast RAM disks, high-speed video cards, and assorted gimmicks, and still not get close to an Amiga. Multitasking operating system? In your dreams. Someday Microsloth may put one out, and you can bet it will only take up about 16MB of RAM and a couple of hard drives. Now there's a home system.

So while you may see some complete Clone systems for well under $1000, you really don't get anything even halfway functional for less than about $1200 these days. Try $2000 if you want to be reasonably peppy at running your software. So really functional PC Clones aren't competing in the under-$1000 price range. That's the only open ground left for Commodore these days.

Actually, the booming PC sales have created an opportunity here for Commodore. Many people are convinced they need a PC at home but they can't really afford one. Here's where Commodore should step in with an A1200 ad and say "Ah, but you *can* afford a personal computer at home!" Of course, they'd have to stress the software compatibility with MS-DOS, but with CrossDos built-in that's not as hard as it used to be—if only file formats were as easy.

Well, so Apple is offering competition at the low end of the product line; what about the high end? The A4000 is met head-on by comparably priced Macintosh models that also run 25MHz 68040s. Granted, the Amiga shines in animation, but that's not important to the majority of the users out there in the real world. The A4000's hope is to be seen as an important video production and graphics tool. The graphics part is hard to hang onto these days, with so many graphics tools available on PC Clones and Macs. The A4000 is best as a multimedia authoring machine and for any application involving video work—a solid niche that Commodore needs to concentrate on holding, since Apple is making determined efforts to take that away. There's been a lot of video effects cards for the Mac lately, though most are concerned with getting video into digital form for the computer to use. This is exactly the opposite of what's really needed: taking regular video or computer graphics and putting them out into interesting video effects; that's why the Toaster has been so popular. But what the heck, at a street price of under $3000, the

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A4000 is comparably priced to a lot of Mac peripheral cards, and it sure does a lot more.

Here's the bottom line: the price-cutting in the computer business hasn't left Commodore untouched. Why do you think they showed a loss in their latest quarterly results? Especially now that Macintoshes are priced in the same general range, the Amiga has a much tougher time ahead. Commodore has to drop prices to compete. And Apple's not going to let up the pressure, either. It's a rough world out there in hardware land, folks. But the good news is that we can expect to see prices lowered on our favorite computers a bit faster than we would have in previous years.

Price Is an Object

Commodore has announced a number of price cuts recently on their older hardware. Yes, they're still overstocked on A3000s and A3000Ts. You can get a great deal on one of them now; $1500 is pretty good for a 25MHz 68030 system. Heck, keep it around just for rendering, and hook it up via ParNet with your other Amiga. Interestingly, the price cuts on the A3000 and the A2000 aren't quite in parity. For just a couple hundred more than a stripped A2000 with monitor, you can get a loaded A3000 system but no monitor. The Bandito speculates that this may have something to do with the fact that you can easily drop a Toaster into an A2000, where you still have to jump through a hoop or two to put a Toaster into an A3000. Meanwhile, the A500 is being discounted through various mail-order liquidators, while A600 prices are slashed to the bone. Commodore is hoping to get rid of all the old inventory by summertime, leaving only the A1200, A4000, A600 and new 030 AGA machines in the lineup.

CheckSum

Overall, 1993 is a crucial year for Commodore. The new Amigas must be successful for the long term health of the company. If the European market is strong, Commodore may feel that it can afford to lose some ground in the U.S. market. But that's very dangerous thinking. What if European sales are down this year? Then expanding the U.S. market becomes critically important. Commodore has to revitalize their dealerships, expand distribution for hardware and software for Amigas, and above all get Amigas into the hands of new buyers, not just the old faithful Amigans.

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Clearing out the old inventory is nice, but it will take more than a few PowerUp programs to put Amiga sales where they need to be here in the States.

A1200 Add-ons

OK, so you bought yourself a shiny new A1200, and already you're looking for ways to make it bigger, better, faster, or stronger. Fear not! Expansion is on the way. Microbotics is first out of the gate with their MBX1200z combination clock/RAM expansion/68030 accelerator for the A1200, but you can expect many more companies to release their own A1200 expansion devices soon. We'll see RAM expansion, accelerators, SCSI ports, combinations of those, and other devices. GVP has already announced their accelerator board, and by the time you read this there will be more units on the market. And of course some power-hungry types are already clamoring for 68040 accelerators for the A1200. This will be more difficult, as the 68040 is large and it puts out a lot of heat. Never tell an engineer that something can't be done, though; they take that as a challenge.

What the Bandito would really like to see for the A1200 is a nice, slick expansion chassis. There are two different ones being worked on, according to the Bandito's little informers. Let's hope we see some spirited competition this summer for A1200 owner's add-on dollars. By Christmas you'll have plenty of choices for A1200 add-ons, you can be sure.

CD-ROM

CD-ROM mania seems to be gripping the computer industry. Apparently millions of CD-ROM players are connected to PCs, and they were hot sellers last Christmas. As far as stand-alone machines go, Sega CD was the big winner: it sold over 250,000 units last year. And this was with a mere handful of games, most of which weren't all that exciting. The Bandito thought the "full motion video" (actually only about 10 frames per second in a small window with 16 colors) was pretty cheesy, though. Still, the hardware has sold a lot better than CDTV or CD-I ever will unless something changes drastically. How has this videogame add-on without the range or depth of CDTV software managed to sell so well in such a short time? Well, massive promotional efforts from Sega were a big factor, as was the linkage to the highly successful Genesis machine, and Sega's incredible distribution network. But the price is probably the most

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important thing. While $299 is expensive, it's a heck of a lot less than $699.

And Sega's got some support lined up for the Sega CD. Pioneer is building strange combo players that are laser-disc/Sega Genesis/CD-ROM machines. They'll set you back about a $1000, but you will save some space in your home theater racks. Someone will doubtless buy them, but not the Bandito.

Commodore is hoping to capitalize on this by releasing CD-ROM drives for all Amigas this year, as well as dropping the price of CDTV to $599 in an effort to compete. That $599 list price means a street price close to $500, which is very competitive with a lot of CD-ROM drives—not to mention just a tad lower than the price of CD-I. The explosion in CD-ROM drives is accompanied by an increasing number of CD-ROM titles for PC and Macintosh. Once Commodore makes CD-ROM available for all Amigas, we may see more CD-ROM titles for the Amiga, too. There's a business opportunity for some bright person: going to publishers and offering to port Mac or PC CD-ROMs to the Amiga. The publisher gets a royalty where they wouldn't have gotten anything, Amiga customers get more software, and some bright person makes a buck. Sounds like a good idea to the Bandito.

What's happening with CDTV II? The Bandito hears that Commodore isn't sure what to do with this beast. CDTV has done OK, but it hasn't set the world on fire. The price seems to be its best selling feature. And you can bet a CDTV II would be significantly more expensive, perhaps even over $1000. Could Commodore continue selling the original CDTV while trying to sell the new CDTV II for a higher price? Probably not, unless they did some clever marketing magic—not something Commodore is well known for. So we may never see CDTV II, especially if Commodore doesn't feel there's a big sales opportunity. This new 3DO machine and others may steal the limelight from any CDTV II release.

The Bandito has a better idea than CDTV II. How about an Amiga model with a CD-ROM drive built-in? One of those new mid-range AGA machines that remains unannounced because there's still too much A3000 inventory to clean out. A nice, complete package for a street price well under $2000 would be a goal to shoot for.

Even if there isn't a complete CD-ROM machine in the future, CD-ROM drives for the rest of the Amiga lineup will be coming soon according to the Bandito's sources. Commodore will offer a CD-ROM drive as an internal option for the A4000 series this year. Expect them to offer CDTV compatibility, so all those titles already out there will find new homes. When? The Bandito would expect a September release date, but things may slip into Christmas, as they have a way of doing. Double-speed drives would be nice, but given the availability problems with those, we might have to be content with poky old standard 150K/sec data transfer rate.

Photo CD

Meanwhile, discussions with Kodak regarding Photo CD licensing continue. With any luck, Commodore will be able to promote full Photo CD compatibility for the potential new version of CDTV coming up. To really be compatible, though, Commodore will have to use the new HAM-8 mode of the AGA chips, so non-AGA CDTV will be left out. What is Photo CD? It's something new by Kodak that allows you to take regular 35mm photos with your own camera and take them to a film lab. There, instead of getting slides or prints, you get a CD-ROM with your pictures on it in four different resolutions (from plain old 640 x 480 up to several thousand pixels on a side, in 24-bit color). You can view these through a Photo CD player or a computer + CD-ROM drive with the proper software. The cost? About $20 for 24 shots. Not bad for high-resolution scans.

•AC•

PSSST!

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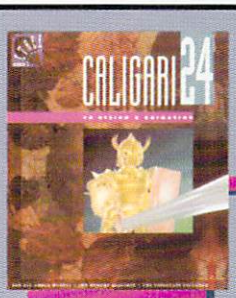
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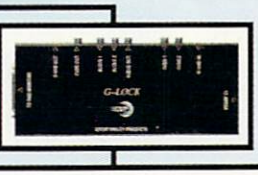
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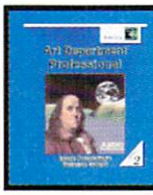
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—MADNESS *continued from page 52*

and return a linked list to the PipeLine handler. A good example would be the Echo Tool.

Communicating with the Narrator Device

As it turns out, communicating with the narrator device cannot be accomplished directly from the PipeLine handler task. There are two reasons:

1) Communication with most devices require an AmigaDOS Process, not a Task. If you've never dealt with programming tasks on the Amiga, this may seem confusing. Tasks are streamlined subsets of Processes. Processes have extra features and data structures to handle communication with AmigaDOS while tasks do not. If a Task tries to write to a file or send a printf() to the console, it crashes very quickly.

2) It's a bad idea to do anything that might be time consuming from the processevent routine. Remember, the PipeLine task handles all movement of MIDI Events through the PipeLines. If one Tool takes its sweet time processing an Event, all other Events are held until it's done. In the world of real time music performance, a burp of more than a few milliseconds is not acceptable.

The solution to both problems is to have a separate Process handle all communication with the Narrator device. We add a routine to send an asynchronous message to this process every time a string needs to be narrated. The process queues up the incoming messages and plays them as quickly as possible. Meanwhile, the PipeLine task continues performing music at a higher priority.

So, before we go any further, we need to create a process and communicate with it. Creating a process is not as easy and obvious as creating a task. Although there is a simple routine to create a task, CreateTask(), nothing equivalently simple exists under Workbench 1.3 or earlier (and we try to maintain support for everything) for creating a process. AmigaDOS does come with routines for loading code from disk and then creating a process for the loaded code segment, but we need to create a process for already loaded code. The solution is to create a phony segment code header and pass it to the AmigaDOS CreateProc() routine:

```
typedef struct CodeHdr {
    ULONG SegSize;
    ULONG NextSeg;
    UWORD JumpInstr;
    APTR Function;
} CodeHdr;

#define TO_BPTR(x) ((BPTR)(((ULONG)(x))>>2))

static long StartProcess(
    (char *name,
    short priority,
    APTR code,
    long stacksize)
{
    static __aligned CodeHdr chead;
    chead.SegSize = sizeof(CodeHdr);
    chead.JumpInstr = 0x4EF9;  /* Jump to */
    chead.Function = code;     /* the routine! */
    return((long)CreateProc(name,priority,
        TO_BPTR(&chead.NextSeg),stacksize);
}
```

Now, our initialization code can call StartProcess() with exactly the same set of parameters that we'd use with CreateTask(), and it works without a hitch.

```
StartProcess("YakProc",0,yakprocess,6000);
```

Before we write the process code, we need to set up a method for comunicating with it. Let's create a message structure using the standard Exec Message structure as its base. We'll add additional fields to communicate the Yak Tool and command:

```
typedef struct YakMessage {
    struct Message message;  /* Exec message. */
    YakTool *tool;           /* Which Yak. */
    unsigned char value;     /* Note value. */
    unsigned char vel;       /* Note velocity. */
} YakMessage;

#define PORTNAME "YakPort"
```

Now, let's create the Yak process. Start the Yak process at the very beginning when Bars&Pipes Professional loads the Yak Tool and calls its initialization code. The Yak process opens an Exec message port and waits for messages. Each message it receives carries the pointer to the destination Yak Tool and the note parameters. When it receives a message, it reads the parameters, frees the message, and calls a second routine, talk(), which translates the string and sends it to the narrator device. Because of space limitations, we haven't included the talk() routine, although it's part of the source code on disk. If you write your own Media Madness Tool that communicates with a device, this is probably where you'll insert code to perform some form of media magic.

The process then waits for another message.

```
static void yakprocess(void)

{
    YakMessage *mm;
    YakTool *tool;
    char value,vel;

   TranslatorBase=OpenLibrary("translator.library",0);
    if(TranslatorBase == NULL) return;
    yakport = CreatePort(PORTNAME,0);
    if(yakport == NULL) {
        CloseLibrary(TranslatorBase);
        return;
    }
    for(;;) {
      mm = (YakMessage *)GetMsg(yakport);
      while(mm == NULL) {
        WaitPort(yakport);
        mm = (YakMessage *)GetMsg(yakport);
      }
      tool = mm->tool;
      value = mm->value;
      vel = mm->vel;
     functions->myfree((void *)mm,sizeof(YakMessage));
      if(tool == NULL) break;
     talk(tool->strings[value],vel);
    }
    DeletePort(yakport);
   CloseLibrary(TranslatorBase);
    yakport = NULL;
}
```

Finally, we need to create our sendcommand routine. This is called from the processevent routine. It takes the YakTool pointer, note value and velocity, stuffs them in a YakMessage, and sends them to the process:

```
static long sendcommand(
    YakTool *tool,
    unsigned char value,
    unsigned char vel)
{
    YakMessage *message;
    struct MsgPort *iport = (struct MsgPort *)
    FindPort(PORTNAME);
    if(iport) {
        message = (YakMessage*)
            functions->myalloc(sizeof(YakMessage),
            MEMF_CLEAR);
        if(message){
            message->tool = tool;
            message->value = value;
            message->vel = vel;
            PutMsg(iport,(struct Message *)message);
            return(1);
        }
    }
    return(0);
}
```

Editing the Yak Tool

Most Tools also provide a routine that gets called when the user double-clicks on a Tool icon in the PipeLine. This routine should open a control window and let the user edit the Tool's parameters. The control window is vital to the Yak Tool's operation, since it is in the control window that you assign text strings to each of the MIDI notes.

Unfortunately, we don't have enough room to cover the intracacies of the writing a Tool's user interface. Fortunately, Tool window programming is pretty much standard intuition programming, with additional system calls for creating and handling embossed buttons and sliders. If you've written a Tool before, this should be old hat. Of course, most of you probably haven't, but the documented source code should answer any questions. The source code is a good place to start anyway, because the Yak Tool is a good skeletal starting point for Media Madness programming.

One feature of the Yak Tool's control window code that is new to Media Madness is the mechanism that installs the hit list translations in the track. Whenever the user enters or edits a text string, the Yak Tool creates a fresh hit list translation table and hands it to the track.

The hit list translation is handled by a variable linked list of HitName structures:

```
#define HITNAMESIZE   30

struct HitName {
    struct HitName *next;
    unsigned char note;     /* MIDI note value. */
    char name[HITNAMESIZE];/* Equivalent text. */
};
```

To install a hit list, create nodes just for the notes that have text strings assigned to them. Although there are 128 available MIDI note values, usually only a handful get used by the Media Madness Tool.

Allocate the memory for the nodes using the Bars&Pipes Professional memory allocation routine, myalloc(). This is important because Bars&Pipes Professional will deallocate the structures at a later time using the reciprocal deallocation routine, myfree().

Install the list with the Bars&Pipes Professional routine installhitlist(track,list).

Notice that both the myalloc() and installhitlist() routines vector off the functions structure, which was provided by Bars&Pipes Professional when it first loaded the Yak Tool. These are just two examples of the many internal routines available to Tool developers.

```
static void assignhits(YakTool *tool)

{
    struct HitName *name, *top;
    char *text;
    int i;
    top = NULL;
    for (i=0;i<128;i++) {
        if (tool->comments[i] && tool->comments[i][0]) {
            text = tool->comments[i];
        }
        else if(tool->strings[i]&&tool->strings[i][0]) {
            text = tool->strings[i];
        }
        else text = NULL;
        if (text) {
            name = (struct HitName *)
                functions->myalloc(
                sizeof(struct Hitname),MEMF_CLEAR);
            if (name) {
                name->note = i;
                strncpy(name->name,text,HITNAMESIZE);
                top = (struct HitName *)
                    functions->List_Cat(top,name);
            }
        }
    }
    functions->installhitlist(tool->tool.track,top);
}
```

The Multimediafunc Routine

The only remaining feature that differentiates a Media Madness Tool from a standard Bars&Pipes Professional Tool is the existence of an additional routine in the ToolMaster structure. This routine, multimediafunc(), provides a way for the Tool to provide special Media Madness specific services.

The multimediafunc routine responds to different commands with different actions. There are two commands:

MMCMD_INSTALLHITLIST is called whenever the Tool needs to install its hit list in the Track. This happens when a Tool is loaded from disk and placed in a track's PipeLine.

MMCMD_COPYALLFILES is called when the Media Madness Recorder is creating a file for the Media Madness Player. If you tell the Recorder to create a data directory for the presentation, it issues this command to each Tool, indicating that they need to copy source material (sample files, IFF images, or some other media) to a destination directory. The Yak Tool actually doesn't listen to this command because it doesn't have any data files that it uses. On the other hand, the ANIMal Tool, which plays animations, receives this command and copies all ANIM files that it references into the specified directory. To facilitate the copying process, a Bars&Pipes Professional system call copyfile((char *)filename,(char *)path) copies any named file to the destination directory.

```
static long multimediafunc(
    YakTool *tool,
    long cmd,
    char *path)
{
    if (cmd == MMCMD_INSTALLHITLIST) {
        assignhits(tool);
        return(1); /*Success.*/
    }
    else if (cmd == MMCMD_COPYALLFILES) {
        short i;
        for (i=0;i<128;i++) {
/*  for each data file that needs to be copied,
    call the system routine
    functions->copyfile(filename,path);
    This reads the file and copies it over to
    the destination path.
*/
        }
            return(1); /*Success. */
    }
return(0);  /*Command not supported.*/
}
```

That's Pretty Much It

Use the Yak Tool to "sing" along with your music. Of course the voice is monotone and has a tendency to mispronounce many words, but, hey, it's fun. Robo-Rap! Yeah! That's the ticket!

The Yak Tool implementation covers everything you'll need to create your own Media Madness Tool. With these programming hooks, you should be able to link your favorite hardware or software device into Media Madness's timeline. Possibilities range from the obvious—lighting control, laser disk players, character generation)—to the wild, wacky, and way out there—X-10 house security systems, remote controlled lava lamps, etc.

For complete documented source code, please see the source code directory included with your Bars&Pipes Professional 2.0 release disk or check on CompuServe or Genie.

•AC•

Please Write to:
David S. Miller & Todor Fay
c/o Amazing Computing
P.O. Box 2140
Fall River, MA 02722-2140

—ARexx *continued from page 57*

Listing Three

```
/* UNIarray.rexx Uniword.rexx re-written to use multi-dimensional arrays */
/* Copyright 1992, 1993 by Merrill Callaway */


PARSE ARG infile  /* get the path if supplied as argument */

IF infile ='' THEN DO  /* get file if not supplied */
   SAY 'Input filename and path.'
   PULL infile
   END

CALL TIME('R')  /* reset the timer */
rcode=20 /* return code for an error */

IF OPEN('textfile',infile,'READ') THEN DO
   rcode=0 /* successful opening of file */
   listed.=0
   m=1
   i=1
   DO WHILE ~EOF('textfile')
      line.i=READLN('textfile')

      IF line.i ~= '' THEN DO
         j=1

         DO WHILE line.i~=''
            PARSE VAR line.i word.i.j line.i
            word=word.i.j
            /* NOTE! You cannot use an array as a NODE! */

            /* Get rid of punctuation at end and beginning of words. */
            DO FOREVER
               IF DATATYPE(word,'N') THEN LEAVE
               IF ~DATATYPE(RIGHT(word,1),MIXED) THEN DO
                   IF LENGTH(word)>1 THEN word=LEFT(word,LENGTH(word)-1)
                    ELSE LEAVE
                    END
               IF ~DATATYPE(LEFT(word,1),MIXED) THEN DO
                   IF LENGTH(word)>1 THEN word=RIGHT(word,LENGTH(word)-1)
                    ELSE LEAVE
                    END
               IF DATATYPE(LEFT(word,1),MIXED)&,
                DATATYPE(RIGHT(word,1),MIXED),
                  THEN LEAVE
               IF LENGTH(word)=0 THEN LEAVE
               END
            /* Finish ridding words of punctuation */

            IF word='' THEN ITERATE
            IF listed.word THEN ITERATE
            listed.word=1
            list.m=word
            m=m+1
            j=j+1
            END
         END
      i=i+1
      END
   i=i-1
   IF line.i = '' THEN i=i-1
   END
ELSE SAY 'Could not open your file!'


/* The Shell Sort  Feed the array to Shell Sort directly! */
listlength = m-1
span = 1
DO WHILE (span < listlength); span = span * 2; END
DO WHILE (span > 1)
   span = span % 2
   numpairs = listlength - span
   DO node = 1 TO numpairs
      nextnode = node + span
      IF list.node > list.nextnode THEN
         DO
         store = list.nextnode
         list.nextnode = list.node
         DO bubpos = node-span TO 1 BY -span WHILE (store < list.bubpos)
            nextnode = bubpos + span
            list.nextnode = list.bubpos
            END bubpos
         bubpos = bubpos + span
         list.bubpos = store
         END
      END node
END
/* the end of the shell sort of the words */

/* write the sorted list to the console window. */
DO m=1 TO listlength
   SAY list.m
   END

SAY 'Elapsed time is 'TIME('E') 'seconds.'
/* Elapsed time for comparison of pgms */
EXIT rcode
```

→

CORRECTION!

ISSUE: February, 1993

ARTICLE: The FAT A2000, *by Phil Combs*

We incorrectly reproduced Figure 2 of the Chip RAM expansion project for the A2000. This error could hinder your success with the project. The corrected figure, supplied by the author, has been reprinted here. This correction should allow you to successfully complete the expansion project. We apologize for any inconvenience this may have caused.—*AC*

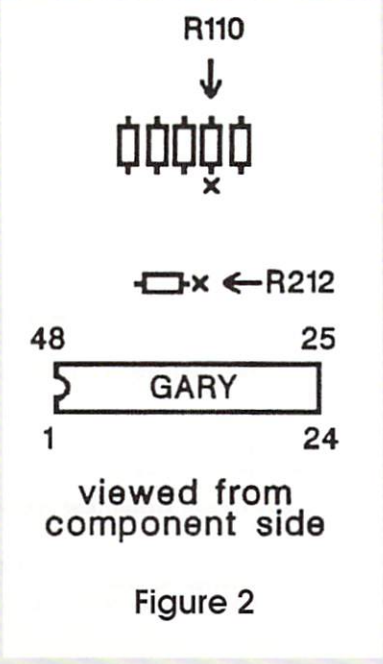


Figure 2

Listing Three

```
/*
** UNIStemarray.rexx
** UNIarray.rexx re-written to use Rainbow Series Stem/Array
** Call the sort rountine ShellSortStemArray.rexx as an exterior
** function, where the array here is assigned via AssignArray().
** The returned value is the number of words sorted.  The external
** function program alters the values of the array from this
** program, so that the final array written at the end of this program
** is the sorted array EVEN THOUGH it is the "SAME" ARRAY!
** copyright 1992, 1993 by Merrill Callaway
*/

SAY 'Input filename and path.'
PULL infile
CALL TIME('R')
rcode=20
IF OPEN('textfile',infile,'READ') THEN DO
   rcode=0

   /* initialize an entire array with one line! */
   listed.=0

   m=1
   i=1
   DO WHILE ~EOF('textfile')
      line.i=READLN('textfile')

      IF line.i ~= '' THEN DO
         j=1
         DO WHILE line.i~=''
            PARSE VAR line.i word.i.j line.i
            word=word.i.j
            /* NOTE! You cannot use an array as a NODE! */
            /* Get rid of punctuation at end and beginning of words. */
            DO FOREVER
               IF DATATYPE(word,'N') THEN LEAVE
               IF ~DATATYPE(RIGHT(word,1),MIXED) THEN DO
                   IF LENGTH(word)>1 THEN word=LEFT(word,LENGTH(word)-1)
                    ELSE LEAVE
                    END
               IF ~DATATYPE(LEFT(word,1),MIXED) THEN DO
                   IF LENGTH(word)>1 THEN word=RIGHT(word,LENGTH(word)-1)
                    ELSE LEAVE
                    END
              IF DATATYPE(LEFT(word,1),MIXED)&DATATYPE(RIGHT(word,1),MIXED),
                THEN LEAVE
               IF LENGTH(word)=0 THEN LEAVE
               END
               /* end punctuation removal */

            IF word='' THEN ITERATE
            /* testing of "random access" array */
            IF listed.word THEN ITERATE
            listed.word=1 /* boolean 'yes' */
            list.m=word
            m=m+1
            j=j+1
            END
         END
      i=i+1
      END
   i=i-1
   IF line.i = '' THEN i=i-1
   END
ELSE SAY 'Could not open your file!'


/* Adjust the count. */
m=m-1

/* Call the exterior function program. */
k=ShellSortStemArray(list.,m,1)
SAY k 'entries sorted.'

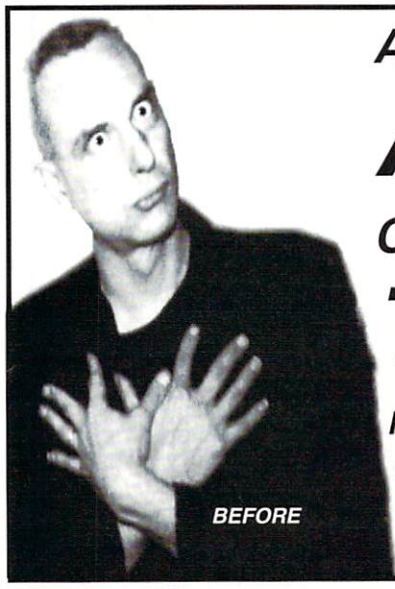
/* Write the sorted array to the console. */
DO j=1 TO k
   SAY list.j
   END

/* For time comparisons of this pgm with others. */
SAY 'Elapsed time is 'TIME('E')' seconds.'

EXIT rcode
```

•AC•

Please Write to:
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—**Learning** *continued from page 63*

Compilers

Many options exist for C compilers/linkers for the Amiga user. The following is not a complete list, but rather compilers that are often mentioned on USENET and local bulletin boards. At one end of the spectrum are complete commercial packages that are appropriately priced, to the other end, programs that are freely distributable. The first time C programmer may want to start with an inexpensive compiler and purchase an expensive commercial compiler when they get serious about C programming.

SAS/C Compiler (formerly Lattice C):

This commercial compiler package is considered by many to be the best. The entire package includes a C compiler/linker, an editor, a source level debugger, on-line help using CBM's new Amiga Guide, and a number of smaller programming aids. Latest version: 6.2 (2/93).

Manx/Aztec C:

Another commercial compiler package that has been used by many users for years. Recent rumors suggest this package may not be upgraded in the near future.

DICE C:

This compiler comes in two versions: a freely distributable version that is somewhat limited, and a shareware version that comes with all the required Amiga-specific includes needed to create Amiga programs. Matt Dillon, a programmer who has added greatly to the Amiga scene, has created the entire package and is preparing a commercial version of DICE. The freely distributable version is available on many bulletin boards or on Fred Fish disks. The shareware version can be obtained directly from Matt Dillon at: 1005 Apollo Way, Incline Village, NV 89451 for $50 U.S. Latest version: 2.06.40 (1/93).

GNU C (GCC):

This is a freely distributable C/C++ compiler that is created by a group of programmers whose purpose is to create quality software free of charge. This package includes a C/C++ compiler, an assembler, a linker, and standard C includes. To do Amiga-specific programming, the user must purchase the CBM accessories from CBM (see Developers Toolkit description below). The GCC package can be obtained from local bulletin boards, commercial on-line services, or USENET sites. People who wish to use this package should note that it takes a fair amount of work to install and that hardware requirements are significant (3+MB RAM and 10MB hard disk space).

As stated previously, this is not a complete list of compilers. A number of other C compilers exist in a freely distributable or shareware form. Local bulletin boards or Fred Fish disks can be searched for other C compilers.

Books:

In my opinion, learning C is only possible with the help of books or a personal tutor. Because most of us do not have a personal tutor, books are the best bet. The "C bible" remains *The C Programming Language* by B.W. Kernighan & D.M. Ritchie (Second Edition). This book defines the scope of the language. It has a tutorial section to help get one started, more in-depth chapters on C commands, and a reference section that states all ANSI C commands/functions and their parameters.

New C programmers may be surprised how thin the "C bible" is. The actual C language is not that large. Much of the true power of C is contained in system-specific functions that are not considered part of the C language. An example of system-specific add-on functions is the Amiga's graphics library that is supplied by CBM. In this library are the C call-able functions that allow the user to draw lines and text, among many other functions. The C language has no commands to perform such operations.

Even though the Kernighan and Ritchie book is the bible, I found it difficult to learn from. Some of the examples were too complicated for me to completely understand. After making a little headway, but experiencing some frustration with the K&R book, I visited an area bookstore looking for a simpler text. As expected, most of the titles were written for the MS-DOS world. Fortunately for the Amiga programmer, many of these books dealt specifically with ANSI C and were useful as a learning tool. I settled on a book appropriately titled *Teach Yourself C* by Herbert Schildt. The entire book is like a tutorial. It walks the reader through many simple examples. It also contains simple programming problems complete with answers.

After you gain some proficiency programming C, the K&R book will make more sense and probably become indispensable. Although it may not be the best book to learn from initially, it is a great reference source that all C programmers should seriously consider owning.

Mentioning these two books in no way suggests an endorsement. Many other fine books exist. As stated previously, the field of Amiga-specific books that address learning C is limited. Abacus does produce a couple of Amiga-specific books. They attempt to combine the learning of ANSI C with Amiga-specific programming. The reader will have to decide which approach is best for him or her.

Get to Work

Armed with an editor, a C compiler/linker, and books, the programmer-to-be is ready to learn C. As with learning any new skill, practice is the only way to make progress. It is one thing to read a book, it is another to turn an idea into working code. Program after program will need to be entered, compiled, and debugged to become proficient with C. Be prepared to crash your Amiga on a regular basis. Do not be discouraged. It is highly unusual, even for the best C programmer, to create an error-free program that executes flawlessly the first time. Do not be afraid to create your own programs. Use examples in the books as a guide to help locate your mistakes. When all seems lost and you do not see the error of your ways, consider getting help from people on bulletin boards. Many experienced C programmers are happy to help a neophyte get past their nemesis code. Also don't forget, there are many ways to solve a problem. If one method of coding does not work, search for an alternate technique that does.

Learning Amiga C

Once a modicum of confidence is gained with ANSI C, the programmer is ready to create Amiga-specific C code. Given that Amiga-specific functions can be considered to comprise another "language," it is helpful to obtain more reference materials. Many books and disks from various sources exist to point the Amiga programmer in the correct direction. Some of these references are almost essential to program the Amiga.

ROM Kernel Reference Manuals (RKM's)

This *Amiga Technical Reference Series* published by Addison Wesley and written by CBM, consists of a number of books that are considered by many to be indispensable to the Amiga programmer. The most recent edition (Third Edition) provides many examples of how to program Amiga-specific functions for AmigaDOS 2.0. Each book deals with a specific aspect of the system software and shows the reader how to code system compliant programs. Example code from the *Amiga ROM Kernel Reference Manuals* are available on Fred Fish disks 741 and 742. This saves the programmer from having to type in examples from the book.

Amiga ROM Kernel Reference Manual: Libraries

This is a must have book for the Amiga programmer. It deals with the User Interface Libraries, Exec Library, Graphics Libraries, and a number of additional libraries. If you plan on opening Amiga windows or screens, using menus, creating requesters, using gadgets, performing graphic operations, and allowing users to interact with your program, this is the book for you.

Amiga ROM Kernel Reference Manual: Devices

This reference book assists the programmer in using Amiga devices and IFF files. If you plan on using any Amiga device such as Audio, Clipboard, Console, Gameport, Keyboard, Printer, Serial, and other devices, this is an essential. The appendix contains documentation describing the IFF standard. This is helpful for programmers who need to create or load IFF files.

Amiga ROM Kernel Reference Manual: AutoDocs & Includes

This book is a compilation of all the Amiga-specific functions and a description of each function's parameter list and return type, that is, what information the user must supply to the function and what information the function will return to the user. There are no examples of how to use the functions. The Includes part of the book, is a hardcopy version of all the include files that are generally part of most compiler packages. All the information contained in this book can be obtained on disk from CBM as part of the Native Developers Software Toolkit, which is discussed below.

Amiga ROM Kernel Reference Manual: Style Guide

This manual is less of a how-to-program resource and more of a how-your-program- should-look guide. It is published so that programmers who plan to distribute their creations design their programs in a consistent manner. By following the examples set forth in this book, it is hoped that all programs written for the Amiga will behave in the same manner from the user's perspective. In my opinion, this book is not essential for the average programmer who does not plan to release his or her work.

The AmigaDOS Manual (3rd Edition), by Bantam Computer Books

This manual provides information about AmigaDOS, both from a user's and a programmer's perspective. It discusses AmigaDOS file and data structures, the CBM supplied ALink linker, and AmigaDOS commands callable from C programs. Examples of these commands include getting the current directory, opening and closing files, reading and writing to and from files, executing a separate program or command, etc. For some business/legal reason, AmigaDOS commands are contained in this manual by Bantam Computer books, while all the other CBM-Amiga manuals are published by Addison Wesley. This has resulted in a very different style/format for the books, an unfortunate situation for the user.

Software Developer's Toolkit

Commodore makes available to programmers a set of disks that contain very useful example code, autodocs, includes, and software tools. For under $25 U. S you get four 2.04 disks full of very helpful information that eases programming on the Amiga. As stated previously, the Autodocs & Includes are part of this set. Example Code from various sources, including AmigaMail (see below), provide functioning code that use Amiga-specific commands. A number of debugging tools such as Enforcer and Mungwall are included. These help the programmer create more stable code that is less likely to crash the computer.

When a new version of AmigaDOS is released, all the information in the Software Developers Toolkit for that new version is made available to registered Amiga developers. Commodore will often release the prior Toolkit for use by the general public. In essence, the weekend hacker can obtain much of the same information a professional programmer can, only at a later date. To obtain information about ordering the Software Developer's Toolkit, write to:

Commodore Business Machines - Department C
1200 Wilson Drive
West Chester, PA 19380 USA
215/431-9180

AmigaMail

CBM publishes a newsletter approximately every two months that offers programming tips. This is generally published for developers, but it can be ordered from CBM - Department C by non-developers.

CManual (V3.0)

This mammoth work compiled by Anders Bjerin fills almost 12 Amiga floppies when unpacked. It is a book on disk(s) that addresses C programming on the Amiga. It is full of simple examples that demonstrate common Amiga-specific programming tasks. There are over 40 chapters of text that explain how to program the Amiga. The CManual can be found on Fred Fish disks 691-695.

Miscellaneous

An often overlooked method of learning C or of improving C programming prowess is to examine the enormous volume of freely distributable code that exists on bulletin boards and on Fred Fish disks. It takes some work, but locating and analyzing the work of others can assist you in overcoming seemingly insurmountable programming hurdles. Care must be taken to respect the intellectual rights of others. Unless the code is truly in the public domain, it cannot be copied unmodified into your programs. Generally, it is best to figure out how the code works and then write your own original code.

Learning to program the Amiga in C may not be the easiest task, but it is definitely worth the effort. The many hours I have spent in front of my Amiga have not only been intellectually stimulating, but a great deal of fun. Set aside some time and prepare to expand your horizons.

•AC•

Please Write to:
Douglas Stockman
c/o Amazing Computing
P.O. Box 2140
Fall River, MA 02722-2140

DIVERSIONS

Lords of Time

by Rick Broida

I don't know what a flux anomaly is, but I like the sound of it. In fact, I like the sound of *Lords of Time's* entire premise: You're a test pilot in the year 2016. During a routine test flight in an experimental aircraft, the plane's untested Multidimensional Friction Propulsion Generator encounters a flux anomaly—and havoc ensues. The sky unfolds and seems to fracture, leaving a rift into which you and your plane are sucked. Suddenly you've shifted worlds, and your plane is plummeting toward an unfamiliar landscape. The impact knocks you unconscious, and when you awaken, it is to the face of an old man peering into yours. He offers some confusing advice as to escaping your predicament, and promptly vanishes. Looking around, you find you've crashed in some sort of medieval forest. One that couldn't possibly exist in 2016. One that seems to have evil eyes.

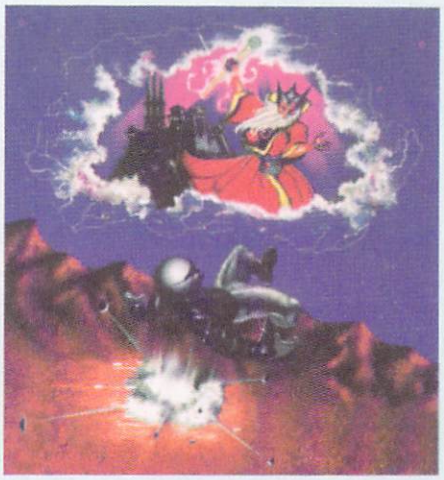
The scene is set. Though Hollyware Entertainment's Lords of Time borrows storylines from "Back to the Future" and "A Connecticut Yankee in King Arthur's Court," its gameplay is largely Dungeons and Dragons.

Before embarking on your quest to find a way home, you are presented with a randomly-generated game character, featuring such numerical characteristics as strength, dexterity, intelligence, and health. If the numbers meet with your approval (i.e., the character has enough intelligence to become a magician or enough strength to be a good warrior), the game begins at your crash site in the forest. If the characteristics are too heavily weighted one way or another, you can elect to "try for a better a character." A tap of the joystick button produces another set of numbers, and another, until you've found the best arrangement.

The game screen is divided roughly in half. The top shows an overhead view of your character, with his health, spells, and gold listed neatly on the right. The bottom of the screen is devoted to messages and menus. The latter includes options to examine your surroundings or inventory, perform various actions, save or load a game, and so on.

But it's the top window that chronicles the action. Unlike most role-playing games, Lords of Time has arcade roots. A joystick controls your character's movements, and the joystick button makes him use whatever weapon he's holding. In the beginning, your goal is mainly search and destroy. Food, gold, and weapons are the priorities, for without them your character will quickly perish. All of these vital goods can be found lying about the forest—it's just a matter of aimless wandering and blind luck that uncovers them.

Your initial wandering will be fraught with peril. Various nasty creatures attack you at random intervals, the reason why things like strength and dexterity are important. You can always outrun the spiders, zombies, and such, but it's easier to dispatch them. I've yet to figure out the trick to doing so. You simply let one get close, then push the joystick button to use your weapon. Usually you win, but not without losing some health points, although they regenerate gradually. Sometimes, inexplicably, the creature will defeat you and suddenly the game's over.



Fortunately, save features abound. Not only can you save the game to disk, you can save it to RAM as well. Hence, if you periodically save your current position, it's a quick and simple matter to recall that position when restarting. Alas, only one spot can be saved at a time, but Lords of Time does offer the unique feature of automatic saving. This option, when invoked, automatically saves the game to memory every seven minutes. My compliments to Hollyware for realizing such an option isn't just for word processors.

Lords of Time involves more than just forest exploration and simple combat. Ultimately your character will find clues to escaping this strange world, clues that may appear in towns, caverns, or mountains. There are rivers and oceans to be crossed—you'll need to purchase a raft first—magical spells to be learned, dragons to be fought, townsfolk to be consulted, and so on.

But Lords of Time requires loads of time to play, and that's part of my problem with the

game. It's dull. From the very beginning, it takes forever to find anything other than countryside. Occasionally you stumble across a pile of gold or a short sword, and zombies are perpetually climbing out of the ground to attack you. But that's it. Eventually, after navigating your character through a forest full of trees, you might find a tavern or a shop only to discover you haven't found nearly enough gold to buy anything. So it's back to the forest. And once you leave, it's virtually impossible to map where you're going or where you've been.

Still, Lords of Time is eminently playable and easy to learn. It merely requires some patience to get to the meat of the game. The graphics and sound effects are good but not spectacular, the instruction manual the same.

Lords of Time requires only 512K of RAM and a joystick. Unlike many games, it has the capacity for hard-drive installation. This commendable feature is accentuated by a significantly faster load time—although loading Lords of Time from floppies is relatively quick, and the game does recognize two disk drives.

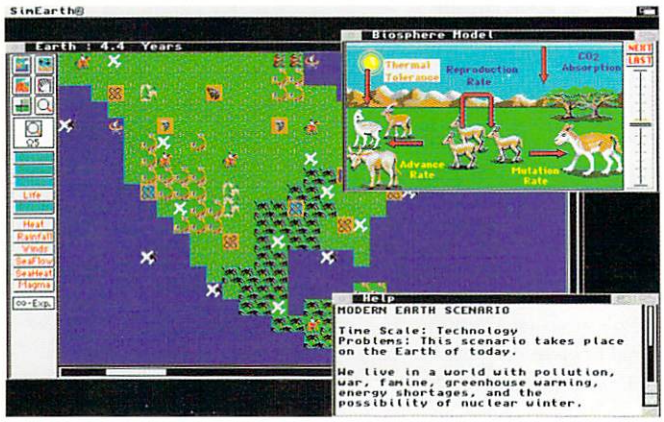
I was excited by Lords of Time's premise but disappointed by its execution. It lacks the spark of a good arcade game and the depth of a meaty role-playing adventure. However, if you've got to time on your hands and a fair amount of patience, Lords of Time does offer the rewards of solving a good mystery.

Lords of Time
Hollyware Entertainment
13464 Washington Blvd.
Marina Del Rey, CA 90291
(310) 822-9200
Inquiry #202

SimEarth

by Jeff James

As yet another installment in their popular line of simulations, Maxis' new *SimEarth* ($69.95) succeeds admirably at bridging the gap between entertainment and educational software. While *SimCity* casts the player as a city planner in a growing metropolis, SimEarth allows you to take control of an entire planet from its birth until its death, billions of years later. Along the way you'll be given the opportunity to alter the terrain of your world, change the atmospheric composition, introduce life, and eventually create an intelligent, star-faring civilization—all from scratch. SimEarth begins with the player choosing one of eight scenarios and four difficulty levels. Each of the scenarios presents thorny environmental challenges which you must overcome. The aquarium world requires you to create and nurture life on a water-covered planet. If you're a science-fiction fan, SimEarth offers up the opportunity to terraform toxic Mars and Venus into habitable, life-bearing worlds. Finally, the four difficulty levels allow you to adjust gameplay to fit any skill level.





Creating a world in which life can grow and thrive can be a challenge; thankfully, SimEarth offers a plethora of playing options to facilitate your efforts. A variety of graphs, charts, and other informational devices are available to help you analyze the composition of your nascent world's atmosphere, find the best environment for various lifeforms and to help keep an eye on pollution and global warming. SimEarth is based on scientist James Lovelock's Gaia Hypothesis, which hypothesizes that the Earth acts much like a single, living organism. True to this hypothesis, every action you perform in SimEarth will have a strong cause-and-effect relationship with other factors. For example, introducing a large number of plants into your world will increase the level of oxygen in the atmosphere; introducing oxygen-using animals will decrease the amount of oxygen and increase the carbon dioxide levels in the atmosphere. Guiding your growing world through these and other scientifically-veracious obstacles can be an arduous task.

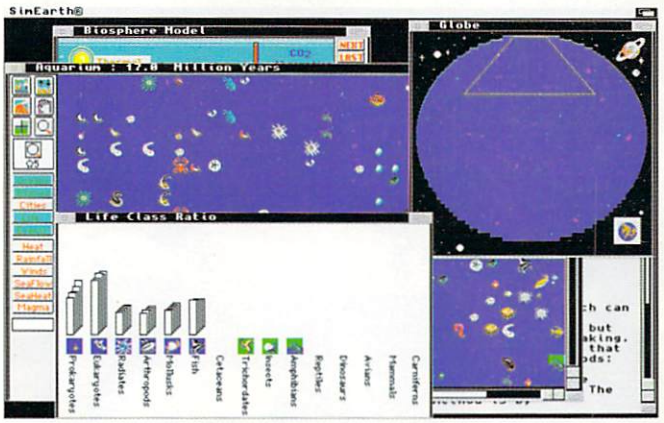
For gamers who want more immediate results, SimEarth supplies a number of nifty gadgets to speed the evolution of your world along. Special machines called "generators" can be placed on your planet to artificially produce large quantities of oxygen, carbon dioxide, and other elements. A "vaporator" loads the atmosphere with immense quantities of water vapor, while a "biome generator" is a must for terraforming toxic environments. Neatest of all, you can use the "monolith"—an enigmatic device patterned after the black slab featured in Arthur C. Clarke's book "2001: A Space Odyssey"—on many of the organisms in the game, speeding that life-form along the path to sentience. If your world starts to take a turn for the worst, you can forcefully set things right by using a variety of disasters like hurricanes, meteor strikes, tidal, and even nuclear weapons in an effort to get your creation back on the right track.

Keeping an eye on all of your efforts is Gaia herself, a graphic representation of how well you are doing. Gaia appears in a standard AmigaDOS window as the planet Earth with a set of human features. If you're doing well, Gaia will smile and

wink; if your game is on the road to disaster, Gaia's frowning countenance will clue you in. Amiga-specific amenities abound in SimEarth, including an on-line help system, keyboard equivalents and superlative AmigaDOS 2.0 support. SimEarth even supports ARexx, with a variety of commands available. Two versions of SimEarth are included for Amiga owners: a 320 X 200 resolution version for Amigas with only 1MB of RAM, and a 640 X 400 version requiring 2MB of RAM. The hi-res version is aimed squarely at Amiga 1200, 3000, 4000, and other Amiga owners with the ability to display non-interlaced high-resolution screens on VGA or multi-sync monitors. SimEarth is fully hard-drive installable, and the copy protection involves looking up a word in SimEarth's copiously illustrated, clearly-written manual of over 200 pages. Indeed, Maxis has imbued SimEarth with enough Amiga-specific features to make developers of more "serious" Amiga software applications jealous.

On the negative side, both the lo-res and hi-res versions run a little sluggishly on unaccelerated machines, and the retail price of $69.95 is a little steep. SimEarth should appeal primarily to gamers with an affinity for intricately-detailed simulations of real-world events. In many respects, SimEarth seems more like an interactive science project than a game; fiddling with the distribution of prokaryotes and tinkering with the ozone concentration of your simulated planet may have more in common with a course in biology than a computer game. If you look for fast action and exploding space aliens in your entertainment software, SimEarth is definitely not the product you should buy. However, if you're a serious-minded individual looking for an excellent "edutainment" title that simultaneously educates as it entertains—taking advantage of what the Amiga has to offer as it does so—SimEarth is the game to get.

SimEarth
Maxis
1042 Country Club Drive,
Suite C
Moraga, CA 94556
(415) 376-6434
Fax: (415) 376-1823
Inquiry #203



Fables & Fiends: The Legend of Kyrandia - Book One

by Chuck Miller

Kyrandia is an enchanting world, a magical and ancient kingdom. For centuries, Kyrandia and the Natural World were partners in a covenant of mutual care and protection. This liaison between the people and the land itself stood secure for many years bound by the Kyragem, a symbol of the sacred alliance and the source of great magical powers, until the day a usurper took control—Malcolm, the court jester.

Consumed with the desire to possess and control the Kyragem, Malcolm murdered the King and Queen. Once it was in his possession, he began his reign of terror. Had it not been for the power of Kallak, chief of the Mystics and father of the Queen, Malcolm would have destroyed all of Kyrandia. Instead, Kallak magically sealed Malcolm within the royal palace where he could do no further harm, at least not until now, as the story unfolds. For, Malcolm, to the fear of all, escapes.

Thus, the stage is set for this first quest in a new series by Westwood Studios, creators of *Eye of the Beholder* I and II. Now, under the Virgin Games label, they are continuing their magic with one of the freshest and most enjoyable animated adventures to appear on the Amiga in quite some time from a company other than LucasArts.

The Legend of Kyrandia, in which the player assumes the role of Brandon—Kallak's grandson and royal heir to the throne, is the first adventure in Westwood's Fables & Fiends series of animated quests. Offering a blend of a Sierra-style storyline and LucasArts-style animation and humor, Kyrandia is a winner right out of the box. I believe it is among the three best Amiga adventures released in 1992.

Unlike many recent translations of MS-DOS quests to the Amiga, this adventure exhibits a high degree of quality in the porting of the graphics and animation. Though some detail has been lost and compromises were made in the selection of colors (as in flesh tones), the reduction from 256-color VGA graphics to 32 colors on the Amiga is not as drastic as in many other conversions. Much of the original "feel" has been maintained. There is also no problem with loss of speed or detail in animation—a noticeable problem with Sierra's Amiga releases. Kyrandia runs smoothly, making transitions from one scene to another just as quickly as the MS-DOS version. This should be no surprise to those who have enjoyed Westwood's Eye of the Beholder conversions on the Amiga.

As for music, the background soundtracks provided in this quest are beautifully written and performed, adding immensely to the atmosphere of the game, being richer than that of most animated quests. The only shortcoming concerning the audio enhancements in Kyrandia is the lack of sound effects. Those which are provided are excellent. However, additional effects would have further enhanced play. For example, in one scene waves are crashing against the rocky shore without making as much as a splash. This point aside, though, there is little to criticise in the game.

Kyrandia's interface is among the simplest I have seen in an animated adventure. All interaction, apart from saving the game, is accomplished with the left mouse button. Clicking the cursor on an item picks it up; clicking on an area of the screen moves Brandon to that location. To travel from one screen to the next, the cursor is placed at the extreme edge of the screen. If movement in that direction is

possible, the cursor remains an arrow. If travel in that direction is not permitted, it becomes a familiar "NO GO" sign. To manipulate an object, simply pick it up and operate it (click it) upon the desired person or thing.

Kyrandia requires little to enjoy the benefits of play—1MB of memory and Kickstart 1.2 or higher. However, to gain the greatest pleasure from this quest, a hard drive and accelerated system are a definite advantage. Play from floppies is possible, but with a total of nine disks plan on quite a bit of disk swapping. Kyrandia supports all Amigas from the A500 through the A3000. However, I was unable to test the game on the newer AGA systems.

Overall, The Legend of Kyrandia is an excellent game offering a good blend of exploration, puzzle solving, and humor. While it did seem a touch lean in total playing time, the experience was a rich and rewarding one. I look forward to future titles in the Fables & Fiends series. Congratulations should be offered to Virgin and Westwood on an exceptional piece of entertainment software.

Fables & Fiends
The Legend of Kyrandia—
Book One
Virgin Games, Inc.
18061 Fitch Ave
Irvine, CA 92714
(714) 833-8710
Inquiry #204

Robin Hood: Conquests of the Longbow

by Jeff James

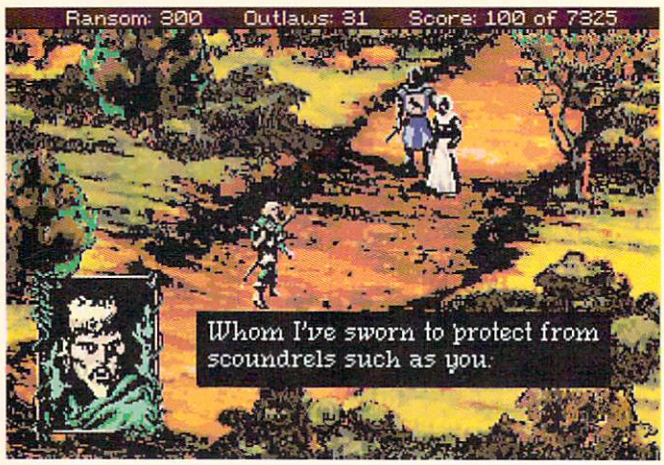
The Amiga release of Sierra's *Robin Hood: Conquests of the Longbow* (RHCL) represents both good and bad news for Amiga owners. On the positive side, RHCL is the most visually impressive conversion yet from Sierra, offering support for the Amiga's 64-color, extra-halfbrite graphic mode. On the downside, the Amiga port of RHCL may be Sierra's last product for the Amiga. As of this writing, Sierra had decided to indefinitely suspend support for the Amiga, citing poor sales of its Amiga products both in the States and abroad.

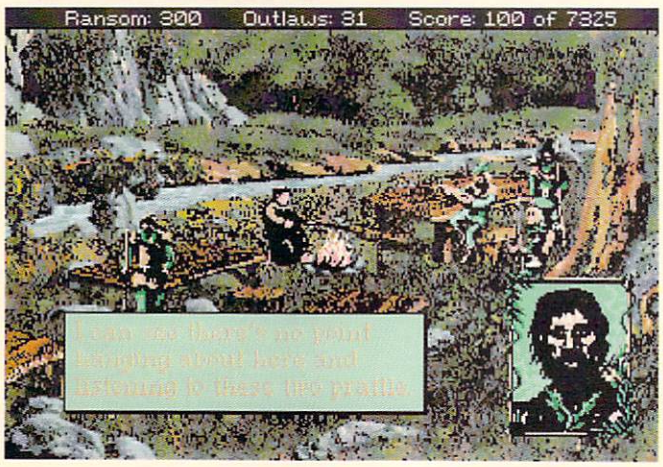
RHCL begins with the player assuming the role of the colorful Robin Hood, leader of a soft-hearted band of altruistic brigands. All of the characters which have helped make the tale of Robin Hood such a memorable one are all present: Little John, Alan-a-dale, Will Scarlet, Friar Tuck, and the beautiful Maid Marian are just a few of the well-known personages that populate this graphic adventure. The setting of the story revolves around the good King Richard, who has been kidnapped—while returning from the crusades—by King Leopold of Austria. King Leopold has demanded a weighty ransom for Richard's release. Unfortunately, Richard's evil brother Prince John, ruling in his place in England, has no intention of paying the ransom and setting Richard free. Though several minor subplots emerge during play, including Robin's romantic relationship with Maid Marian, thwarting the schemes of Prince John and restoring Richard to the throne will be your primary goals.

Sierra's point-and-click playing interface is put to good use in RHCL, and is used to access all of the game's features. Used in other recent Sierra releases such as *King's Quest 5* and *Leisure Suit Larry 5*, this interface relies entirely upon the mouse for use. Clicking the right mouse button toggles through a variety of actions, which change the appearance of the screen pointer to reflect their function. For example, a few clicks of the right mouse button will change the pointer into a hand. Moving the hand over an on-screen object with your mouse and then clicking the left mouse button will prompt your on-screen persona—in this case, Robin Hood himself—to walk over to the object and pick it up. From conversing with other characters, examining your surroundings, and flinging arrows at your foes, Sierra's interface will accommodate you. For moving in and out of Sherwood Forest and the surrounding environs, a convenient overhead map is used, allowing you to click your way to distant locations. Several arcade elements are available if you'd like to perforate a target, living or otherwise, with a few dozen arrows. For those of us with rickety reflexes, those same arcade elements have adjustable difficulty levels, including an "automatic win" setting.

As mentioned earlier, the graphics in RHCL are a definite improvement over Sierra's other games for the Amiga. Robin himself is rendered in bright greens and subtle browns, with a shock of yellow for his hirsute facial appearance. Sound and music are also excellent; designer Christy Marx and company reportedly used instruments commonly played in medieval England to fashion the music for the game. Regardless of the source, the music meshes perfectly with the location, time period and mood of the game. This attention to detail shows up in other parts of the game as well, such as in the inclusion of an actual boardgame played in medieval England called "Nine Men's Morris." In terms of documentation, a tersely written 25-page booklet is filled with interesting bits of history about the Robin Hood legends, complete with a extensive bibliography. Compliments must go to Christy Marx and the rest of the RHCL crew for concentrating on the "little things" that make a game memorable.

Although the graphics in RHCL are considerably better





than those seen in any other Sierra-Amiga release, they're not perfect. Some of the backgrounds used in the game look washed-out and indistinct, appearing much like smudged watercolors. Screen animation is sluggish on slower machines, although owners of accelerated Amigas should see this problem mostly eliminated. RHCL requires a hard-drive; thankfully, an installation utility is included which quickly transfers the contents of the eight-game disks onto your hard-drive, where they occupy about 7.5MB of space.

RHCL isn't perfect; the aforementioned flaws with regards to graphics and animation are notable ones. However, RHCL is undoubtedly Sierra's best effort yet at an Amiga product; it's just a shame that it has to be the last. It's unusual that Sierra chose to drop support for the Amiga just as the Amiga 1200 and 4000 hit the streets, carrying with them improved graphics capability that would have made porting Sierra's 256-color MS-DOS games to the Amiga much easier. Regardless of Sierra's reasons for abandoning the Amiga, I do hope they will take Commodore's new Amigas into account and reconsider their position. If RHCL is indeed the last game that Sierra ever makes for the Amiga, at least they've left the Amiga market with a bang.

Robin Hood: Conquests of the Longbow
Sierra
P.O. Box 485
Coarsgold, CA 93614
(800) 326-6654
Inquiry #205

Conquest of Japan

Rob Hays

Conquest of Japan, from Impressions, gives you a chance to try your hand at 16th-century Japanese military strategy and tactics.

Actually, the name is a bit of a misnomer, because rather than all of Japan, the action is limited to the main island of Honshu. At the start of the game, you and a rival warlord each have control of five cities, placed randomly on the map. Given the limited resources of each city, you must raise an army, decide how much of that army to leave at home for defense, and begin marching the rest toward one of your opponent's cities. As you are doing this, your adversary is doing the same with his five cities.

Five different types of soldiers are available for your army, consisting of Samurai, both on horseback and on foot, Archers, Spearmen, and Arquebusiers. These last used some of the first firearms available in Japan, an early type of musket. Each type has its own strengths and weaknesses, and one of the challenges in the game is finding the most efficient mix of soldiers.

When two armies meet, the game switches from the strategic map of the entire island to a tactical map of the immediate battlefield. Now, rather than icons of cities and armies, the screen consists of animated figures representing the makeup of the army you have. A double row of icons allows you to issue orders concerning formations and movement to either your entire army, individual units, or even single soldiers. These icons also provide you with information concerning offensive and defensive capabilities of your troops, and their overall health and well-being.

The battlefield area is several video screens in each direction, and you can scroll your view using the eight keys around the 'S' key. Battle action proceeds without any further action required of the player, although you can pause at any time and change formations to take advantage of the shifting tides of war. Finally a victor is announced, and the display returns to the main map for further army movements until the next clash.

Conquest is supplied on two disks, and although it can be installed on a hard drive by typing a couple of simple commands in the CLI or Shell, this seems to have been an afterthought for the designers. After you copy the files to the hard disk, the manual simply states that now you can play from the hard drive. However, since there is no icon provided for the Workbench, the game must be started from the CLI or Shell. The manual doesn't tell you how to do this, and unless you read the Startup-Sequence from the game disk, you may never guess the command that starts the game is "Conquest.ami". A further complication comes from the fact that the game recognizes "DH0:" as the only permissible hard drive designation. If you have the game in a partition called "Fun:", for example, either add to your Startup-Sequence, or type into a CLI or Shell before beginning each game the command ASSIGN DH0: FUN:.

The game runs under AmigaDos 2.04, but doesn't run properly on accelerated machines. The program seems to use internal software rather than the computer's hardware to time events. A screen of information that you're given thirty seconds to read on an A-500, flashes by in only five when you play on a 25Mhz A-3000. The same timing problem also causes the program to sometimes misinterpret mouse clicks, resulting in unwanted actions. Although there is a game speed option, this only affects the animated battle sequences. Although it does not multitask, it does return you to the Workbench when you exit the game.

Fully half of the 110-page main manual is devoted to a history of Japan and the culture represented in the game. A 20-page booklet walks you through an introductory game, and a 12-page Strategy Supplement rounds out the documentation. There is no copy protection, and up to six games can be saved. Games can be played by two people, one person against the computer, or you can let the computer play both sides. The only system requirements listed on the box are an A-500 or higher with a minimum of 1MB of memory.

Conquest of Japan
Impressions Software
7 Melrose Drive
Middletown, CT 06032
(203) 676-9002
Inquiry #206



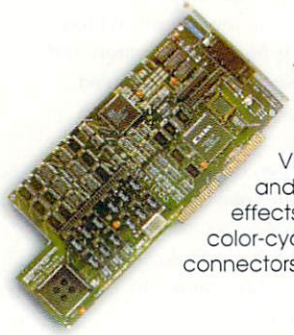
OpalVision™

"Awesome, Spectacular, Amazing, Brilliant, Wonderful"

Choose any positive adjective and chances are it's already been used by both critics and consumers to describe OpalVision and OpalPaint — the most professional 24-bit power you've ever seen!

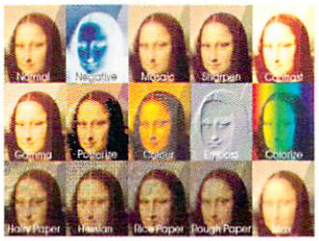
And now, Centaur Development and Opal Technology, whose dedication to excellence created OpalVision and OpalPaint, are pleased to give you complete details on all of the OpalVision modules...

OpalVision's state-of-the-art modular design gives you unequalled versatility. Start with the OpalVision Main Board and included software. Then easily add additional modules if you require more capabilities, spending only what you need to get the results you need. Each of the modules fully integrates to create a seamless system.



The OpalVision Main Board

A true 24-Bit frame buffer and display device with 16.8 million colors available for every pixel and a maximum resolution of 768 x 480 (580 PAL). An internal card, it operates automatically in NTSC or PAL mode in any Amiga computer with a video slot (including the Amiga 4000). It's powerful VLSI graphics coprocessor enables stencil modes, a host of transition effects and smooth, hardware-controlled priority switching and scrolling/panning effects. The board's state-of-the-art design allows smooth fading of pictures, color-cycling effects, and smooth, double-buffered 24-Bit animation. Includes connectors for all of the optional OpalVision components.



Includes OpalPaint and OpalAnimMATE for state-of-the art painting and 24-bit animation.

The OpalVision Video Processor



Plug this card into the OpalVision Main Board and add a wealth of additional features and functionality. It's a high-quality, real-time 24-Bit framegrabber which doesn't require a time-base corrector. And, it's a professional-quality genlocker with chroma and luma keying. The 256-level linear transparency key allows the definition of transparency between two live video sources on a pixel-by-pixel basis for smooth vignettes, anti-aliased text and super-smooth effects. The Video Sandwich key allows you to insert chroma or luma keyed video between definable foreground and background layers of a 24-Bit image. It also provides real-time color processing of live video and an unlimited number of transitions and Digital Video Effects using the included OpalVision Roaster Chip and software. These include cuts, wipes, fades, and special organic effects (soft- or hard-edged), plus an infinite range of flips, tumbles, picture-in-picture, page peels and image wrapping.



Opal Roaster Chip creates unlimited Digital Video Effects and Transitions.

- **24-bit real-time framegrabbing from composite or S-Video.**
- **Professional quality genlocking.**
- **Real-time, live-video color processing and chrominance effects**
- **High-quality Digital Video Effects**

New Features:

- **Now includes powerful, VLSI microcode processor "Roaster Chip" for Digital Video Effects of unequalled quality.**
- **Luminance keying with definable upper and lower levels**
- **Chroma keying on any color range**
- **256-level "Alpha Channel" (transparency) key.**
- **24-bit, 35ns character generation software**
- **24-Bit Picture-in-Picture and Video Sandwich Keying**

Included Software:

- **Opal Character Generator**
- **Special Effects Manager**
- **OpalVision System Software**

Inputs/Outputs:

- **1 Composite in/out**
- **1 S-Video in/out (S-VHS, HI-8, Y/C)**
- **1 expansion connector for Video Suite**
- **1 RGB out via DB-23 connector**



Alpha Channel functions with OpalPaint and with the Video Processor for transparency overlays.

The OpalVision Video Suite

A power-packed video and audio mixing, switching, and transcoding device. This 19-inch, rack mountable unit is so advanced that it has its own internal computer and every aspect is software-controlled for precisely timed and accurate functionality. The Video Suite includes a wealth of inputs and outputs. There are 9 video and 10 audio inputs available, plus the 24-bit frame store. Professional quality video inputs and outputs are available simultaneously in RGB or Y/R-Y/B-Y, Composite and S-Video. Choose any 2 sources from these inputs, assign a transition or special effect, and then trigger it manually or automatically. All of the transitions and effects provided by the OpalVision Video Processor are available for use by the Video Suite.



A,B and Preview display LED Audio Level VU meters



Audio Inputs | Sound F/X or 5th Audio input | Stereo output | RGB or Y/R-Y/B-Y inputs and master sync input | 4 Composite and 4 S-Video inputs | Preview composite and S-Video outputs | Main composite and S-Video outputs | Main RGB or Y/R-Y/B-Y and sync outputs | Key in/out | OpalVision input/ output | Power Connector

The linear transparency key (Alpha channel and transparency effects) can be taken from the Video Processor or an external video source, and/or output to another production switcher. This allows transparency control between 2 video sources on a pixel by pixel basis. The 10 Audio inputs (5 stereo pairs) are fully software sequenced with smooth fades and full, 5-band stereo frequency equalization.

Video Inputs:

(All available simultaneously)

- **4 composite inputs (8 composite inputs if S-Video inputs are used as composite)**
- **4 S-Video inputs (S-VHS, Hi-8 or Y/C)**
- **1 or 2 RGB or Y/R-Y/B-Y inputs (2nd source uses the 4 composite inputs)**
- **1 master sync input (master sync can be selected from any video source)**
- **1 infinite level linear transparency key**

Video Outputs:

- **1 composite main output**
- **1 S-Video main Output**
- **1 RGB or Y/R-Y/B-Y main output**
- **1 linear transparency key**
- **1 composite preview (automatically transcodes composite & S-Video)**
- **1 S-Video preview**

Audio:

- **Inputs: 10 mono or 5 stereo pairs**
- **Output: Stereo with 5-band equalizer and VU meters**

OpalVision Scan-Rate Convertor

Add this card to the OpalVision Main Board and achieve 31kHz, non-interlaced output of Amiga graphics, OpalVision images and any incoming source in either PAL or NTSC. And, we've added full time-base correction of incoming video. Time base correctors are used to synchronize two non-synchronized video signals, or for cleaning up the timing of a "dirty" video signal. The on-board memory also serves as a separate frame-store for dual framebuffer applications.

- **Converts interlaced PAL and NTSC to 31kHz non-interlaced, flicker-free display.**
- **Plugs into the OpalVision Main Board. No external power supply needed.**
- **Works with any multi-sync/multi-scan monitor.**

New Features:

- **Includes full, infinite window Time Base Correction**
- **Operates in RGB for superior quality**

Video Performance

Video Input Standards (User selectable):	NTSC, NTSC 4.4, PAL, SECAM
Video Output Standards:	NTSC, NTSC 4.4, PAL
RGB output Bandwidth	>7 MHz
Composite (Luma) Bandwidth	4.5 MHz typical
S-Video Bandwidth	5.5 MHz typical
Hue Control	+30 to -30 degrees
Video lock jitter	<15ns
Horizontal position adjust	-320 to +1000 ns
Horizontal lock range	+/- 1200Hz typical
Subcarrier lock range	+/- 350Hz minimum
Linear Keyer input speed	>7 MHz

Audio Performance

Audio Inputs	10 inputs (5 left, 5 right) line level 20k ohms
Audio Outputs	2 outputs (Left, Right) line level 70 ohms
Input Mode	Differential for very low noise
Frequency Response	20Hz - >20kHz
Frequency Equalization points	59 Hz, 205 Hz, 790 Hz, 2.95 kHz, 12 kHz
Equalization Range	+/- 15db
Total Harmonic Distortion	0.05 % typical
Mixing level control	0 to -70db (independent software controlled DAC's)
VU meters	10 steps -20db to +3db range

Amiga 2000/ 3000/ 4000 Compatible



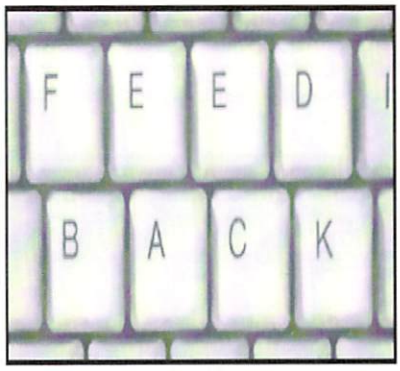
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Opal Tech
Sydney, Australia

For information:
1-800-621-2202
Phone: (310) 542-2226
FAX: (310) 542-9998
BBS: (310) 793-7142

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Feedback

Letters to the Editor

edited by Paul L. Larrivée

This month: in praise of fair reviewers; a game recall; a shared frustration; a user group offer from Japan; and a suggestion to advertisers.

PhunnyPhonemes Phulfills Phunctions

Thank you for the thorough review of Parth Galen's PhunnyPhonemes in *AC* V8.2. The reviewer carefully studied the product, and although I don't concur with some of his concerns or the practicality of some suggestions, I do share his general assessment. Given the constructive criticism provided by the reviewer, Parth Galen will certainly endeavor to improve its future offerings.

Mr. Rick Manasa stated that the program does multitask but screen changes will interrupt the game display. In fact, no provision exists within the program to change to other display screens because young children become disconcerted by such changes.

Secondly, PhunnyPhonemes does not use the Workbench "say " utility but rather the underlying "narrator.device" speech handler. The quality of the resultant voice admittedly is not as good as that attainable with digitized speech. However, the extent of the exercises provided in PhunnyPhonemes demands both the flexibility and compact storage space achievable through algorithmic speech synthesis. It is not possible to have our cake and eat it too.

Thirdly, the selection of words within any one exercise is to demonstrate the use of a particular "phonetic" construct in the sense of how English words are spelled. Thus Mr. Manasa's criticism of the use of such words as "mete" and "rede" as being "removed from the everyday life of the 6–11 year-old" misses the point that both these spellings exhibit the use of long "e" vowels in words having a silent terminal "e," and in fact are presented as part of that subject. "Meat" and "read" would properly be covered in an exercise on the "ea" diphthong pair. Phonetic spelling, or reading, exercises are not directed at the meanings of words but rather the association between sounds and letter patterns.

It should be recognized that a child who can read phonetically can negotiate some rather advanced literature without understanding content, and this is not necessarily a good thing. Likewise, a child who can write phonetically can incorrectly spell dirty words on bathroom walls at a very early age, and that is not a good thing either. But phonetic exercises can be taught easily, even by something as dumb as a computer, and this makes phonetics an attractive subject for the Amiga. Obviously there are limits to how successfully any computer program could address this subject. Mr. Manasa identifies a number of limits in the program and ends with a "Recommendations" section that carefully avoids any recommendations after having provided all the information needed by a parent, tutor, or teacher to make a decision. This is a conscientious and responsible approach to the review process. I commend Mr. Manasa for his thorough work in this review of a child's game.

Ronald J. Altman
Parth Galen Company
Cold Spring, MN 56320

Next Generation Trivia Challenge Recalled

Effective immediately, I am requesting that no further copies of my game *Next Generation Trivia Challenge* (NGTC) be distibuted. If you presently carry a copy of this game on your BBS or in your user's group, or if you are passing copies to others, please stop. Further distribution could result in legal proceedings with Paramount Studios and infringement of rights was never my intention.

This statement should serve to warn any others who may be distributing such material to cease. Any gain you might realize is not worth the risk you are taking.

Greg Epley
Lexington, NC 27292

*As a service to Greg, who we are certain intended no violation of rights, we urge all who may be affected to heed his message.—**PLL***

Shared Frustration in Using CompuGraphic Fonts

After reading the letter by Conrad Small in "Feedback," AC V8.2, I realized that my frustration was shared in trying to find the correct library to use the CompuGraphic fonts in Workbench 2.04.

When the program instructed me to use Diskfont Library version 37, I called my local Commodore dealer, who could offer no help. The program's installation instructions appeared to be for hard disk users only. At the time I was using two floppy drives so I hadn't read the installation instructions.

I did, however, find the solution. After carefully checking all the disks that came with Workbench Release 2.04, I found that the necessary library file is indeed included. However, rather than being on the Workbench disk, it is included on the disk "Amiga Fonts," in the Libs directory. Once this is copied to the start-up disk, the program should work fine. I have since found that this information is stated in the hard-disk installation instructions in the program documentation.

I hope that this solves Mr. Small's problem. As for me, I'm avoiding 2.1, saving instead until I can afford to buy a machine that runs 3.0.

Eric Polling
Seattle, WA 98102

JAG to the Rescue of Manila User

I read in "Feedback,"*AC* V8.2, a letter from Lafayette A. Lim of the Phillipines; I hope that you still have his address. Our membership in the Japan Amiga Group is not restricted to Japan. We offer consignment sales of used hardware/software. We already have a number of the items in Lafayette's dream list. As difficult it seems for him to get Amiga software, we hope to help. I'm sure that he, his sister, and their friends can take advantage of our public domain library. I've provided my fax number in the hopes that you may forward all this information as soon as possible.

Steve Vanderhoef
President, Japan User Group
Commodore Users Group #41
PSC 78 Box 2999
APO 96326 USA

*We're gratified that publishing the letter produced results for Lafayette "Yet" Lim of Manila, for his words were fervently expressed. We are forwarding your information to him. As with all new user groups, we urge you to submit all pertinent details concerning your group to AC's GUIDE, P.O. Box 2140, Fall River, MA 02722-2140. The GUIDE has a special section listing all known user groups. Thanks, again, for offering a solution to Lafayette.—**PLL***

Tell the Porting History

Here are some points that would generally help the Amiga market.

First, companies that port Amiga sofware to the PC and Macintosh should proudly note the software's Amiga heritage in their advertisements. Instead we get instances like these:

> Ads for the PC version of *VistaPro* (Virtual Reality Laboratories) make no mention that it was created and remains available for the Amiga.
>
> Impulse Inc.'s advertisements for the PC version of *Imagine* make no mention of the Amiga version.

I believe advertisements like these hurt the image of the Amiga as a groundbreaking computer. Ads should be written to hype the Amiga origins, say, something like this: "*Supertitle 3D* gives your PC the video power of an Amiga for only $150!" Ads may even offer upgrade coupons in the box to allow non-Amiga users to upgrade to the Amiga versions.

Second, don't make Amiga and PC versions incompatible. In fact, make the default load and save format Amiga IFF (ILBM, 8SVX, DR2D, CMUS, etc.) with options to import/export in non-Amiga formats. Some software like *Photoshop* for the Mac already let you load HAM IFF images so let's make use of that ability. The Amiga already has a good system for interprogram compatibility that the non-Amiga world could do with. Why not introduce it to them?

Third, when comparing their products to others, advertisers shouldn't limit the comparison to Amiga-only software. The 3-D software for the Amiga is excellent. Why not include comparisons to *3D Studio* (AutoDesk) and other PC packages?

On a related note—I still use *WordPerfect* on my Amiga today because its text manipulation features surpass any other Amiga wordprocessing program. I'm sure I speak for more than myself when I say I'd be prepared to spend $200-$300 for an Amiga wordprocessor with the features of a PC heavyweight as long as it was bug-free and it allowed me to exchange files both ways with popular PC/Mac software. The ability of *Art Expression* (Soft-Logik) to load *and* save in *Adobe Illustrator* format is the chief reason for my choosing it over other drawing packages.

Zoltan Hunt
Canada

*It seems this sort of thing works both ways: WordPerfect is a heavyweight PC package ported to the Amiga. Having noted that fact in ads might have added impact because it is a popular PC wordprocessor. The distinction appears to be between graphics packages on the Amiga and on the PC, where the Amiga has the decided edge.—**PLL.***

Please write to:

Feedback Editor
c/o Amazing Computing
P.O.Box 2140
Fall River, MA 02722-2140

Readers whose letters are published will receive five public domain disks free of charge.

•AC•

Back Issue Index

AMAZING COMPUTING

❦ Vol. 7, No. 3 March, 1992
Highlights Include:
"The Miracle Piano Teaching System," by Christopher Piper
"DeluxePaint IV," by R. Shamms Mortier
"Semi-Automatic Painting and Animation," by Kevin Lude
"Screen Photography," taking pictures of your Amiga screen, by Pat Murphy
Also, a special section on Amiga Graphic Design and a look at some special Amiga Artists.

❦ Vol.7 No. 4 April, 1992
Highlight include:
"Foundation", a review by Dave Spitler
"AdPro 2.0", review by Merrill Callaway
"AToncе Plus", review by Rich Mataka
Also, construct a database using your favorite authoring system, customize your start-up sequence, and create and produce your own video!

❦ Vol. 7 No.5 May, 1992
Highlights Include:
"Pelican Press", a review of this entry-level DTP package by Jeff James
"AdIDE/40 Amiga 500 Hard Drive Kit", review by Merrill Callaway
"Building an Amiga MIDI Interface", super project by John Iovine
Also: AC's annual Desktop Publishing Overview! This issue includes a look at the top DTP packages as well as a study of printers, fonts, and clip art available for the Amiga.

❦ Vol.7 No.6 June 1992
Highlights Include:
"Freeze Frame Video Recorder", review by Merrill Callaway
"HP DeskJet Color 500C", review by Richard Mataka
"MREAD", a programming project by Chuck Wardin
Plus: Don't miss an exciting edition of our ARexx feature by Merrill Callaway or 3-D animation with DPaint IV in "The Video Slot", by Frank McMahon.

❦ Vol.7 No.7 July 1992
Highlights Include:
"Modem Rundown", A comprehensive look at modems for the Amiga
"G-Force 040", a review of GVP's 040 accelerator, by Rich Mataka
"SuperJam," a review of this superb music maker from The Blue Ribbon Soundworks, by John Steiner
"FounDex," a tutorial using Foundation's stacks and scripts, by Dave Spitler
Plus, a look at telecommunications and the Amiga including hardware, software, and services.

❦ Vol. 7 No. 8 August, 1992
Highlights Include:
"Digi-View 4.0", by Matt Drabick
"GVP's Digital Sound Studio", review by Matt Drabick
"3D Effects from 2D Amiga Art", tutorial by Shamms Mortier
Plus:
Super ARexx Column for July!
Video Toaster UpDate featured in The Video Slot!
And Much More!

❦ Vol.7, No.9, September, 1992
Highlights include:
"Professional Calc," review of Gold Disk's premier accounting software by Bill Frazier.
"True Basic 2.0" A review of the latest release of the True BASIC language by Paul Castonguay.
"Developing Desktop Savvy," a special project for your favorite DTP software. Using specialty papers to create brochures and pamphlets, by Pat Kaszychi.
"The Video Slot" This month, learn about the new features of Imagemaster, by Frank McMahon.
Don't miss AC's super game coverage in *Diversions*.

❦ Vol.7, No.10, October 1992
Highlights Include:
"Amiga Warrior," Commodore's newest Amiga is a fighter capable of bringing the best of the Amiga to the American consumer.
"MegagageM's CellPro," a review by Merrill Callaway.
"Multi-colored Text in DPaint III," A tutorial to produce dazzling effects with your text, by George Haasjes.
"Game Creation with AMOS," create your own Amiga game, by Jack Nowicki.

❦ Vol.7, No.11, November 1992
Highlights include:
"Amiga 4000," Commodore creates a bold new direction in Amiga computing with expanded graphic resolutions, modular CPU, and more.
"Progressive 040/2000," a review by Rick Mataka.
"Remap Magic," Learn why this tool is your best bet for making use of your palette.
"Beginning C," Chue Xiong covers some of the basics of the C language.

❦ Vol.7, No.12, December 1992
Highlights Include:
"Polishing Basic Programs," Marianne Gillis shares the secrets of BASIC programming experts.
"Banners," A tutorial on creating banner-length printouts, by Pat Kaszycki.
"Structured Drawing & TueBASIC," paul Castonguay shows how TrueBASIC fully supports any level of hierarchical structure.
Also, complete reviews of Voyager 1.1, PIXOUND, VistaPro 2.0, and OpalVision.

❦ Vol.8, No.1, January1993
Highlights Include:
"Creating a Storyboard in Final Copy," see how to layout your animation storyboard in Final Copy. by R Shamms Mortier.
" A Look at 24-bit Libraries," Shamms Mortier looks at 24-bit libraries.
"Using Laser Disk Players with the Amiga," Rom Battle examines the benefits of laser disks as a source of video images. He also shows an easy way to set them up.
Plus: A complete review of the new A1200 & coverage of Comdex Fall 92 & the FES-London.

❦ Vol.8, No.2, February 1993
Highlights Include:
" Extending the AMOS Sort," Dave Senger looks at the AMOS sort function.
" Business Cards," Soft-Logik's Dan Weiss gives an in-depth tutorial on how to create your own business cards.
"AD1012," a review by Rick Manasa.
AND! A special sneak preview of the One-Stop Music Shop from Blue Ribbon & complete coverage of the WOCA Toronto!

❦ Vol.8, No.3, March 1993
Highlights Include:
"Babylon 5," the Amiga changes the way TV shows are made, by les Paul Robley
"AmigaVision Projects," by William Murphy
"Art Expression," review by Merrill Callaway
PLUS: Creative business forms & CES Winter '93

❦ Vol.8, No.4, April1993
Highlights Include:
"TriplePlay Plus & SyncPro", reviews of two great music products by Rick Manasa
"CanDo," a review of the application development system from INOVAtronics, by Rob Hayes
ALSO: Super VideoSlot for April, ARexx, cli, and great Diversions!

AC's TECH

❦ AC's TECH, Vol. 2, No. 1
Highlights Include:
"Build Your Own SCSI Interface" by Paul Harker
"CAD Application Design—Part III" by Forest Arnold
"Implementing an ARexx Interface in Your C Program" by David Blackwell
"The Amiga and the MIDI Hardware Specification" by James Cook
—and more!

❦ AC's TECH, Vol. 2, No. 2
Highlights Include:
"Programming the Amiga in Assembly Language Part 2", by Forest Arnold
"Implementing an ARexx Interface in Your C Program, Prt 2", by David Blackwell
"Iterated functions Systems for Amiga Computer Graphics", by Laura Morrisson
"MenuScript", creating professional looking menus easily and quickly, by David Ossorio
And Much More!

❦ AC's TECH, Vol. 2, No. 3
Highlights Include:
"HighSpeed Pascal," by Dabid Czaya.
"PCX Graphics," by Gary L. Fait.
"Programming the Amiga's GUI in C—Part 5," by Paul Castonguay.
"CAD Application Design Part 4," by Forest W. Arnold.
And Much More!

❦ AC's TECH, Vol. 2, No. 4
Highlights Include:
"In Search of the Lost Windows," by Phil Burke
"No Mousing Around," hide that annoying mouse pointer with this great program, by Jeff Dickson.
"The Joy of Sets," by Jim Olinger
"Quarterback5.0," a review by Merrill Callaway.

❦ AC's TECH, Vol. 3, No. 1
Highlights Include:
"Comeau Computing's C++," A review of this great new C compiler by Forest Arnold.
"Programming the Amiga in Assembly Language Part 5," by William Nee
"Make Your Own 3D Vegetation," Laura Morrison shows how to use iterated functions to create 3D trees and plants.
PLUS! The HotLinks Developer's Toolkit ON-DISK!

What have you been missing? Have you missed information on how to add ports to your Amiga for under $70, how to work around *DeluxePaint*'s lack of HAM support, how to deal with service bureaus, or how to put your Super 8 films on video tape, along with Amiga graphics? Do you know the differences among the big three DTP programs for the Amiga? Does the ARexx interface still puzzle you? Do you know when it's better to you use the CLI? Would you like to know how to go about publishing a newsletter? Do you take full advantage of your RAMdisk? Have you yet to install an IBM mouse to work with your bridgeboard? Do you know there's an alternative to high-cost word processors? Do you still struggle through your directories?

Or if you're a programmer or technical type, do you understand how to add 512K RAM to your 1MB A500 for a cost of only $30? Or how to program the Amiga's GUI in C? Would you like the instructions for building your own variable rapid-fire joystick or a 256-grayscale SCSI interface for your Amiga? Do you use easy routines for performing floppy access without the aid of the operating system? How much do you really understand about ray tracing? **The answers to these questions and others can be found in *AMAZING COMPUTING* and *AC's TECH*.**

For more information call
1-800-345-3360

The Fred Fish Collection

Below is a listing of the latest additions to the Fred Fish Collection. This expanding library of freely redistributable software is the work of Amiga pioneer and award winning software anthologist, Fred Fish. For a complete list of all AC, AMICUS, and Fred Fish Disks, cataloged and cross-referenced for your convenience, please consult the current ***AC's Guide To The Commodore Amiga*** available at your local Amazing Dealer.

Fred Fish Disk 800

ColorSaver A "pop-up-anywhere" (almost!) color palette commodity with several features I could not find in other palette tools. Features include: Load/ Save color palettes; Sliders select- able between RGB/HSV; Copy, Swap, Range Functions; Complement selected color; Left/right shifting of the entire palette; Ability to permanently alter (patch) the color tables of execu- tables with a statically allocated color table. Requires OS2.04 or greater. Version 0.84 (alpha release), includes source. Author: Dan Fish

DocDump A print utility that puts 4 pages of text on one sheet of paper, including page-headers. Beside the normal Dump mode, a double-sided Booklet mode is also available. DocDump uses its own printer drivers, making one yourself is easy. Version 3.6, binary only, shareware. Author: Robert Grob

Enforcer A tool to monitor illegal memory access for 68020/68851, 68030, and 68040 CPUs. This is a completely new Enforcer from the original idea by Bryce Nesbitt. It contains many new and wonderful features and options and no longer contains any exceptions for specific software. Enforcer can now also be used with CPU or SetCPU FASTROM or most any other MMU-Kick- start-Mapping tool. Major new output options such as local output, stdout, and parallel port. Highly optimized to be as fast as possible. This is version 37.28, an update to version 37.26 on disk number 773. Requires V37 of the OS or better and an MMU. Author: Michael Sinz

IffBoot Inspired from BOOTLOGO by Markus Illenseer, allows you to show any IFF file during bootup that will exit when the WB appears. Version 1.0, requires OS 2.04 or greater, binary only. includes some sample pictures. Author: Colin Bell, some IFF pics by Justin Trevena

Least A small, handsome, text displayer that only supports those functions most frequently used. String searching is performed with the very fast Boyer-Moore algorithm. Also checks itself for link viruses. Runs from both WorkBench and CLI. Separate version - LeastP - also deals with powerpacked files. Has been tested under both Kickstart 1.3 and 2.0. Version 0.04, binary only. Author: Thorsten Koschinski

Moontool A port of John Walker's moontool program for UNIX. It gives a variety of statistics about the moon, including phase, dist- ance, angular, size and time to next full moon. A schematic of the current phase is also shown as a picture. This is illustrative only; the accurate phase is shown in the text. Version 1.0, binary only. Author: John Walker, Amiga port by Eric G. Suchanek

MungWall Munges memory and watches for illegal FreeMem's. Especially useful in combination with Enforcer. Output can go to either the serial or parallel port. Includes a new MungList program that examines used memory areas for MungWall tag info, and outputs a list of who owns the various pieces of allocated memory, their sizes, etc. Can even identify the owner of the memory by task name. This is version 37.58, an update to version 37.54 on disk 707. Binary only. Author: Commodore Amiga; submitted by Carolyn Scheppner

Fred Fish Disk 801

ConvertA program that provides the means to easily convert numer- ical values between international, Imperial and US systems of measurement. It does this in twelve fields of measure- ment, including area, capacity, density, energy, fuel con- sumption, length, power, pressure, speed (velocity), temp- erature, volume and weight. It has a flexible, easy to use GUI and works under OS 1.3 and 2.xx. The registered version also has an ARexx port. Version 2.0, shareware, binary only. Author: Mike Fuller

CyberCron A cron utility for AmigaDOS 2.0. Uses the new, more flexible, AmigaDOS 2.0 technique for running programs. Offers an ex- tended set of options that may be specified for any given event. Version 1.5, an update to version 1.3 on disk 682, and includes various bug fixes, code tweaks, four new ARexx commands, documentation in AmigaGuide format, and more. Includes source. Author: Christopher Wichura

CyberX10 A program that can be used to control the CP290 home computer interface for use with the X10 home automation system. It requires KickStart 2.04+ and supports localization under Work- Bench 2.1+. Includes documentation in AmigaGuide format. Includes source. Author: Christopher Wichura

Luna A small program that will display the time and date of the phases of the moon for a month in any year from 1900 to 3000 AD. If a lunar eclipse occurs in that month, its time and date will also be displayed. It has an easy to use GUI and works under OS 1.3 and 2.xx. Version 1.0, freeware, binary only. Author: Mike Fuller

PowerData Patches AmigaDOS, enabling all programs to read and write files packed with PowerPacker in way that is completely trans- parent to themselves and the system. Programs will read power- packed datafiles directly, and will also magically start compressing their own datafiles, as they create or update them. This is version 38.105, the official successor of another pro- gram by this author, Powerpacker Patcher. Partially localized for use with Workbench 2.1. Requires Workbench 2.04+. Share- ware, binary only. Author: Michael Berg

TWC Two Way Chat & Send enables you to make use of your modem's full duplex feature. With TWC you can connect to another Amiga running TWC, then you may transmit files AND chat at the same time, in both directions. GUI-driven, needs Kick- Start 2.04 or higher. Version 2.03, freeware, binary only. Author: Lutz Vieweg

Fred Fish Disk 802

AppISizer An AppIcon utility to get the size of disks, directories or files. Gives the size in bytes, blocks and the actual size occupied. Requires KickStart 37.175 or higher. Version 0.41, an update to version 0.20 on disk 787. Binary only. Author: Gérard Cornu.

FastLifeA fast life program featuring an Intuition interface, 33 gen- erations/second on Amiga 3000/ 25, 19 generations/second on Amiga 2000/500/ 1000, and 200+ patterns in text file format. Runs with Kickstart 2.04 and later, and uses the ReqTools re- quester package (included). An update to version 1.1 on disk 608. Changes include support for all screen modes, screens as large as memory allows, run for a specified number of gener- ations, stop at a specific generation, CLI and ToolTypes sup- port for file name filter and "ON" character within Picture files. Version 2.2, binary only. Author: Ron Charlton

Fd2AsmInc This little program creates assembler include files from ".fd" files (I.E. the original Commodore .fd-files). There are sev- eral ways to format the output file. Version 1.0a, OS 2.xx only, freeware, includes source in assembly. Author: Hanns Holger Rutz

QMouse An unusually small and feature-packed "mouse utility". Was inspired by, but not derived from, the original QMouse by Lyman Epp. Features include automatic window activation (like WindX), top-line blanking for A3000/A2320 users, system-friendly mouse blanking, mouse acceleration/ threshold, "Pop- CLI", click-to-front/back, "SunMouse", "NoClick", "WildStar", Northgate key remapping, and more. Requires Kickstart 2.0, but is not a commodity. Only 3K. Version 2.30, an update to version 2.21 on disk 789. Public domain, assembly source included. Author: Dan Babcock

Fred Fish Disk 803

Hackdisk A complete replacement for trackdisk.device featuring a verify option and better performance. Hackdisk is supplied as an OS module that may be RamKick'ed or placed directly in the Kick- start ROM. This is version 2.00, an update to version 1.12 on disk number 783. Now includes support for 150RPM HD floppy drives and untested support for 5.25 inch drives. Free for non-commercial use, assembly source included. Author: Dan Babcock

HyperANSI The ultimate in ANSI editors. Allows you to edit up to 999 pages at a time, with a unique 'transparency' mode which allows you to 'see through' the pages (and save as a single page). Other features include; Copy, Move, Fill, Replace, Text alignment & justification, line drawing, character painting (colors and/or text), half character painting, and keyboard remapping for all 255 IBM characters, plus more. Shareware, version 1.02, binary only. Author: Mike D. Nelson

MiniPacA very tiny PacMan clone, only about 8K. Binary only. Author: Philippe Banwarth

SCAN8800 A specialized database program to store frequencies and sta- tion names for shortwave transmitters. It can also control a receiver for scanning frequency ranges. Version 2.27, binary only. Author: Rainer Redweik

Fred Fish Disk 804

AmigaWorld A database program that contains information about every country on Earth. It enables you to have a look at the data of one country, or to compare several countries. It is easy to handle, and you can use it with your favourite colors, font, and even language (at the moment there are English and German data files). Requires 1MB of memory. This is freeware version 1.0, Modula-2 source is available by the author. Author: Wolfgang Lug

DiskMate A disk utility with multidrive disk copier (either DOS or non- DOS disks), disk formatter, disk eraser, disk installer, and floppy disk checker. Version 3.0, binary only. Author: Malcolm Harvey

Euphorion A scrolling "shoot'em up" action-game, which contains eight different levels, bonus-stages and a highscore table. This is version 1.1, binary only. Author: Carsten Magerkurth

Password A program to password protect an AutoBooting HD based system. Supports a list of authorized users and their passwords. Version 1.0, binary only. Author: Malcolm Harvey

PubChange PubChange is a commodity for AmigaDos 2.04. It isn't a public screen manager, but it is useful when used in conjunction with one. It is designed to make public screens easier to use. Whenever a new screen is brought to the front, this screen is examined. If it is a public screen, it is made into the de- fault automatically without having to explicitly do it from within a public screen manager. Thus, the current default public screen is always the one which you have most recently brought to the front, and applications which use the default public screen will appear there. Version 1.2, an update to version 1.0 on disk 771. This version fixes two serious bugs and adds minor features. Binary only. Author: Steve Koren

TrueEd A shareware editor. Version 5.5, and update to version 3.40 on disk 630. No documentation, binary only. Author: Jurgen Klein

Fred Fish Disk 805

CDTV-Player A little utility for all those people, who'd like to play Audio-CD's, while multitasking on workbench. It's an emula- tion of CDTV's remote control, but is a little more sophis- ticated. Version 1.5, an update to version 1.0 on disk 759. Public domain, binary only. Author: Daniel Amor

Cleo Implementation of a new experimental Pascal like language. Besides the normal data types, includes 2D and 3D data types, and an RGB color data type. Includes a compiler and inter- preter, example programs, and documentation. Version 1.0, includes full source in C to compiler, interpreter, and examples. Author: DIALLO Barrou

Clouds A program which creates randomly clouds on your screen. You may save them as IFF-files and use them as background for your workbench. Uses new AGA-feature (5-bitplane-hires-screen). Version 2.0, public domain. Includes complete source in KICK- PASCAL. Author: Daniel Amor

RussianFonts This is a scalable vector font. It's the Russian equivalent of the Times Roman font. It comes in two versions, ADOBE TYPE 1 (pbf-file) and PAGESTREAM FONT (dmf-file). This Font is shareware. Designed with FontDesigner. Author: Daniel Amor

Sizer A small and pure shell utility that gives the size in bytes, blocks and the actual size occupied by a directory, device, file or 'assign'. Accepts multiple arguments. Version 0.81, an update to version 0.36 on disk 777. Now requires KickStart 37.175 or higher. Binary only. Author: Gérard Cornu

Fred Fish Disk 806

HDFixer Some of the newer A3000's have high density floppy drives. In the 37.175 version of Kickstart, HD disks are not completely supported in HD mode. This program patches the system so that Kickstart V37.175 owners are able to use 1.71 MB HD disks. This very user friendly, totally new programmed version, comes as a Commodity and supports the new OS2.x functions like Public Screens, scaleable fonts, shortcut gadget activation and so on. Requires Workbench 2.04. This is version 2.00, an update to version 1.10 on disk 690. Binary only. Author: Peter-Iver Edert

Icons Some icons which can be used in the ToolManager dock window (ToolManager © by S.Becker) for instance. There are also a few tips for ToolManager users in the doc file. Author: Andre Weissflog

MXReq Creates a customizeable mutual exclude requester from a shell or AREXX script. The user can select one out of up to eight entries, each of them writes an own value to an environment variable. Including executable, sources, docs, examples and a small bonus tool. Version: 1.20 Author: Andre Weissflog

XSearch A program to search files and directories on any Amiga device. Has options to search for files or directories matching a given name pattern, length, date of last change, iff type, comment, internal strings, and protection bits. Supports the Amiga clipboard. Uses AmigaDOS 2.0 style interface. Includes both German and English versions. Version, 1.1, an update to version 1.0 on disk 724. Includes source in KICKPascal. Author: Stefan Plöchinger

Fred Fish Disk 807

RoachMotelA game where the object is to collect all the spray cans to complete the level. If you touch any creatures you will lose one life, except when stomping on a roach or hitting a roach or boyd with your head while wearing the toupee. Written in AMOS, binary only. Author: Ryan Scott

VCLI Voice Command Line Interface allows you to execute CLI or ARexx commands, or ARexx scripts, by spoken voice command through your Perfect Sound 3, Sound Master (Sound Magic), or Generic audio digitizer. VCLI is completely multitasking and will run continuously in the background, waiting to execute your voice command even while other programs may be running. With VCLI you can launch multiple applications or control any program with ARexx capability completely by spoken voice command. VCLI is compatible with both NTSC and PAL. This is version 5.2, an update to version 5 on disk number 751. New features include the capability to load alternate vocabulary files by spoken voice command, a choice of Amiga hardware timers to reduce interference with other programs, and immun- ity of the display to changes in system fonts. Binary only, requires AmigaDOS 2.0. Author: Richard Horne

VoiceCode This file contains complete documentation for voice.library (Ver 6.4), the public domain Amiga library of voice recognition functions for the Perfect Sound 3, Sound Master (Sound Magic) and Generic audio digitizers. Included are descrip- tions of the functions that will allow your program to learn and recognize spoken words through your 8 bit audio digitizer. Also included are code examples in C and assembly language. Author: Richard Horne and David Benn

XTrash A constant trashcan implemented as an application icon. Can erase anything; files, directories, trashcans and disks. Disk formatting requires an external formatter. Conforms closely to the AMIGA Style Guide. Requires AMIGA OS 2. Version 1.01, includes source in KICKPascal. Author: Stefan Plöchinger

Fred Fish Disk 808

KingFisher A specialized database tool providing maintenance and search capabilities for the descriptions of disks in the format used by this library. KingFisher's database can span multiple (floppy) disk volumes, can be edited by text editors that support long text lines, can add disks directly from unedited email or usenet announcements, can remove disks, rebuild a damaged index, find next or previous software versions, print or export (parts of) the database, and more. Includes a data- base of disks 1-800. This is version 1.15, an update to ver- sion 1.11 on disk 783. Binary only. Author: Udo Schuermann

Look A powerful program for creating and showing disk magazines. Supports IFF pictures, IFF brushes, ANSI, fonts, PowerPacker, and many more features. Programmed in assembly language to be small and fast. German language only. Version 1.5, an update to version 1.2 on disk 743. Now runs on NTSC machines in interlace mode and includes many new features. Shareware, binary only. Author: André Voget.

Fred Fish Disk 809

CPK A program to render a space filling representation of atoms in molecules. This is the type of representation one would find in the plastic 'CPK' (Corey, Pauling, Kendrew) models often used in organic chemistry. There are no hard coded constraints on the number of atoms it can process, it cor- rectly handles intersecting 3-dimensional spheres by using the Bresenham circle algorithm in 3D, and computes using the the current display screen resolution for simplicity and speed. Version 1.0, binary only. Author: Eric G. Suchanek

EPU A program like Stacker or XPK that allows applications to access compressed data from AmigaDOS devices without knowing that the data is compressed, and automatically compresses new data. The file size is not limited by memory and the settings of the handler can

Special Notice!

The following Fred Fish Disks have been changed by request of the author. Please change your copy of these Fred Fish Disks to reflect this change.

Fred Fish Disk 404a

LHArc An archive program like Arc and Zoo, with a heavy emphasis maximum compression for minimum archive size, using LZHUF compression. This is version 1.30, an update to version 1.21 on disk 383. Binary only. Author: Paolo Zibetti

NGTC (This material was removed at the request of the author) Author: Gregory Epley

Fred Fish Disk 405a

GIFMachine A program that will convert CompuServe GIF image files into IFF SHAM and 24bit ILBMs. It offers a number of extra options like dithering, horizontal and vertical flip, as well as automatic border removal. Requires KickStart version 2.0 or greater to run. Version 2.104, includes source. Author: Christopher Wichura

NGTC (This material was removed at the request of the author) Author: Gregory Epley

Fred Fish Disk 506a

NGTC (This material was removed at the request of the author) Author: Gregory Epley

Fred Fish Disk 507a

LHCon A program that will convert Arc and Zoo formatted archives to LHArc format. This will save precious disk space. LHCon will do single files or entire directories. It also has the capability to preserve the comment field of the file for BBS programs that require it and for the individuals who label their programs in that manner. Version 1.01. Binary only. Author: Steve Robbins and Bill Huff

NGTC (This material was removed at the request of the author) Author: Gregory Epley

Fred Fish Disk 538a

BCBMusic This is the second set of original music in the BCBmusic series. This set includes the songs "Still Waiting", "Transpose", and "Trilogy". Like the first set (on disk 428), no player program is required since it is actually compiled in with the song. These new songs include a new equalizer-style graphic display which can be toggled on and off. WB2.0 compatible, binary only. Author: Brian C. Berg

MatLabPatch Patches for both Matlab and Diglib on disk 499. The version of Diglib compiled for 68000 machines has some incorrectly compiled modules (compiled for 68020) and therefore causes crashes on 68000 machines. The Plot.sub module compiled for 68000 machines in the Matlab archive was linked using the incorrect Diglib and does not run on 68000 machines. This update provides correctly compiled replacements for both those files. Author: Jim Locker

NGTC (This material was removed at the request of the author) Author: Gregory Epley

be changed at any time. Version 1.0, shareware, binary only. Author: Jaroslav Mechacek

GetString A small utility that puts up a string requester and stores the result in an environment variable (either local or global) that can be used in Shell scripts. Requires OS 2.04+ and ReqTools.library. Written in E, source included. Author: Diego Caravana

SmallMath "Drop-in" replacements for the Commodore IEEE math libraries for users with a math coprocessor. Since these libraries do not contain the coprocessor-emulation code normally present, they are 60%-90% smaller than the usual libraries. For the same reason, however, they cannot be used without a coproces- sor. Version 1.2, an update to version 1.1 on disk 718, fixes a bug in the cmp() function. Public domain, partial source included. Author: Laz Marhenke

Fred Fish Disk 810

Amiga_E An Amiga specific E compiler. E is a powerful and flexible procedural programming language and Amiga E a very fast com- piler for it, with features such as compilation speed of 20000 lines/minute on a 7 Mz amiga, inline assembler and linker integrated into compiler, large set of integrated functions, module concept with 2.04 includes as modules, flexible type-system, quoted expressions, immediate and typed lists, low level polymorphism, exception handling and much, more. Written in Assembly and E. Version 2.1, public domain, includes partial sources. Author: Wouter van Oortmerssen

MakeDMake An automated DMake file generator. You give it the names of all the C-files used to produce your executable (except #include'd .c or .h files), and it will automatically scan them to find all dependencies, and produce a ready to use (in many cases) DMakeFile calling DCC with options you will need for normal compilation and linking. Version 0.19, an update to version 0.15 on disk 789. Includes source. Author: Piotr Obminski, from original code by Tim McGrath

PrintManager A printer spooler for AmigaDOS 2.0 or later. Works with all programs, whether they use the parallel or serial device, use PRT: or the printer device directly, are printing text or gra-phics, and has an Intuition interface. Version 1.0, binary only. Author: Nicola Salmoria

Snake An updated version of the old computer game which lives in a Workbench window. You control a "snake" which grows by eating "frogs" and avoiding obstacles. Requires AmigaDOS 2.0. C source included. Author: Michael Warner

StarClock StarClock displays time, date and stardate of the popular TV series Star Trek in a small window on the right hand side of the workbench screen. StarClock is a commodity. Requires OS 2.0 or greater. Version 1.01, binary only. Author: Michael Laurent, Volker Goehrke

TimeKeeper A program that restores system time after resets. This is accomplished by storing the current time in a resident struct- ure at regular intervals and restoring it at reboot. Useful for Amigas that don't have a battery backed up clock. Requires KickStart 2.0 or higher. Version 1.0, includes source in C. Author: Mattias Moltkesson

Fred Fish Disk 811

bsh A powerful advanced shell and interpretive programming language. Runs on AmigaDOS 1.2 AmigaDOS 2.1. Major features include command history, command line editing, command substitution, redirection and piping, redirection of standard error file, concurrent piping for external commands, here documents, aliases, file name completion using wildcards ('*', '?'), pattern permutations, variables, array variables, local and environment variables, variable exporting, C-like expression evaluation, conditionals, looping, more than 50 builtin commands, more than 40 builtin functions, script programming, workbench startup via newbsh, directory aliases, shell window manipulation and command search by CLI path, by bsh path variable, command hashing and resident command loading. Version 0.98, shareware, binary only. Author: Gary Brant

MagicNoises A MED module package including: Happy Hour, Magic Voices, Take it slow, Terminator II. Author: Lars Rößiger

WhiteLion A new Othello (Reversi) playing program. Strong and fast, it explains the rules and plays different strategies depending on the selected level. Supports interLaced resolutions. Version 1.2_FD, english and german executables. ShareWare, C sources and special version available when registering. Author: Martin Grote

Fred Fish Disk 812

PPMC The Powerpacker Mini Clone. This is powerpacker.library meeting gadtools.library: A small utility, useful for compressing any text or data file. This is version 1.2b, an update to version 1.1 on disk 751. Many new enhancements, including a complete Shell interface, hypertext documentation, a brand new look, localization, Danish, Dutch, and French catalogs, etc. Includes 68030 and 68040 versions, plus source for SAS C. Author: Reza Elghazi

SCAN8800 A specialized database program to store frequencies and station names for shortwave transmitters. It can also control a receiver for scanning frequency ranges. Version 2.28, an update to version 2.27 on disk 803. Now works on NTSC Amigas. Binary only. Author: Rainer Redweik

Fred Fish Disk 813

AmigaBase A hierachical, programmable, in-core database that runs under OS 1.3 and OS 2.0. Has a full intuition interface. Features include two display methods, filter datasets, search datasets, print datasets, and much more. Nearly everything can be realized by programming AmigaBase. Datatypes can be Integer, Real, Boolean, String, Memo (Text), Date and Time. Number of datasets is only limited by available memory. Also included in the package are some example projects. Version 1.21, an update to version 1.20 on disk 792. Shareware, binary only. Author: Steffen Gutmann

GIFdatatype This program is a datatype that understands the GIF file format. Once installed, it allows any datatype-aware programs (such as MultiView) to read GIF files as if they were IFF. You can also use them as screen backdrops. Datatypes only exist at WB3.0 and greater. Version 39.2, binary only. Author: Steve Goddard

MinedOut A remake of the BASIC program of the same name for the Sinclair Spektrum, by Ian Andrews. Mined Out is a strategy game, like Mine on disk 725 or AMines on disk 707. The object of the game is to find a way from the bottom of the minefield to the top, to escape a computer enemy. Version 1.0, shareware, binary only. Author: Dieter Seidel

Fred Fish Disk 814

BootJob The BootBlock Utility. Includes functions to store, install, view, or execute any disk bootblock. Also self-made bootblocks can be installed to disk. The most powerful function is to save any bootblock as an executable CLI-File. Now you can start every boot-util, viruschecker, game, or loader from the CLI. Also included is a drawer with 46 different bootblocks. BootJob requires Amiga OS2.x. This is version 1.30, an update to version 1.00 on disk 760. Shareware, binary only. Author: Michael Bialas

FIM The Fast-Intro-Maker. Use this little IntroMaker to create your own Intros in a few minutes. Includes functions to insert selfmade IFF-Pictures, Color-Screentexts, Music and more. Final created Intros will run on OS1.2/1.3/2.x (WB/Cli). F.I.M. requires Amiga OS2.x. This is version 2.2, an update to version 1.0 on disk 760. Shareware, binary only. Author: Michael Bialas

MemBar A simple program to display the free memory using a window with bars for chip and fast memory. Version 1.0, public domain, includes source. Author: Benjamin (Pink) Stegemann

Monopoly Demo version of a Monopoly game written in C. Version 1.0, shareware, binary only. Author: Ken Gilmer

NoteEdit NoteEdit is a utility to write and save crypted notes. The ability of an automatic diary is included as well. Version 1.0, freeware, includes source. Author: Benjamin (Pink) Stegemann

TreeGrow TreeGrow is a program which generates quasifractal trees or plants. The idea is taken from "Spectrum der Wissenschaft", the german release of "Scientific American". Version 1.0, freeware, includes source. Author: Benjamin (Pink) Stegemann

Fred Fish Disk 815

AntiCicloVir A link virus detector that detects 27 different such viruses. Checks your disk and memory for known link viruses, and can also detect known bootblock viruses in memory. Version 1.7, an update to version 1.6a on disk 767. Shareware, binary only. Author: Matthias Gutt

InspireDemo Demo version of a new, easy to use, AmigaDOS 2.0 text editor. The demo is the same as the registered version, except that save and print are disabled in the demo. Inspire uses the new features of AmigaDOS 2.0 extensively, including using the ASL requester for font and file selection, and the gadtools library for standardized gadgets. The display database is used so you may open any type of screen that your computer is capable of. Features include an ARexx port, undo, find and replace, bookmarks, text centering, word wrap, case conversions, clipboard support, auto indenting, and more. Version 1.2, binary only. Author: Josh Van Abrahams

ShuffleRun A game for two players. Try to collect more points than the other player. A level editor is implemented. 300 levels are included, 100 can be edited. Version 1.0, freeware, includes source. Author: Benjamin (Pink) Stegemann

Fred Fish Disk 816

Egypt A small game for one or two players. Find three chests of gold in a computer generated maze. Version 1.0, freeware, includes source. Author: Benjamin (Pink) Stegemann

Look A powerful program for creating and showing disk magazines. Supports IFF pictures, IFF brushes, ANSI, fonts, PowerPacker, and many more features. Programmed in assembly language to be small and fast. German language only. Version 1.6, an update to version 1.5 on disk 808. Shareware, binary only. Author: André Voget.

Revenge Revenge of the Blob, an animated interpretation using Bill Watterson's original cartoon strip character "Calvin". Tells the story of Calvin's encounter with his mother's food, and how the dreaded tapioca monster gets back at Calvin for turning his nose up at it. Version 1.0. Author: David Wiles

Fred Fish Disk 817

CTimer A pair of programs for use with Sys1.3 and Sys2. CTimer will measure the execution time of any section of code from a complete program down to a single line. Freeware, includes source. Author: Chas A. Wyndham

EditKeys A keymap editor. Supports editing of string, dead and modifiable keys, as well as control of repeatable and capsable status of each key. Runs equally well under AmigaDOS 1.3 or 2.0. This is version 1.3, an update to version 1.2 on disk 642. Binary only. Author: David Kinder

Hextract A complete header file reference. Definitions, structures, structure members and offsets, flag values, library contents, function definitions, registers, library offsets, prototypes, and pragmas. The data from a set of V2.x Amiga and Lattice header files is included and packed for immediate reference by Hextract. Version 1.3, an update to version 1.2 on disk 726. Freeware, includes partial source. Author: Chas A. Wyndham

Install A replacement for the AmigaDOS Install command, with an Intuition front end. This is version 1.2, an update to version 1.1 on disk 643. Includes source in assembly. Author: David Kinder

S-Text Turns texts into completely self-contained, self-displaying compressed files callable from Workbench or a CLI. S-Texts will save disk space and can be transferred from disk to disk without having to think about reader and decompression compatibility. Version 1.2, an update to version 1.1 on disk 760. Freeware, binary only. Author: Chas A. Wyndham

Fred Fish Disk 818

LoadLibrary Another LoadLib program, but this version runs in it's own task, and uses the reqtools.library for multiselection and other user friendly file handling. All installed LoadLib libraries can also be removed from the system. Supports the locale.library and Amiga-Guide. Version 2.52 an update to version 2.52 on disk 743. Freeware, binary only. Author: Nils 'Jon' Görs

TankHunter A simple action game for two players. Destroy the tank of your opponent. 50 levels are included. You can choose between sound effects or a background song. Version 1.0, freeware, includes source. Author: Benjamin (Pink) Stegemann

UUCoderWindow An intuition user interface for the CLI commands UUEncodeX and UUDecodeX, written by Michel Bekke. Requires AmigaDOS 2.x. Version 1.0, freeware, binary only. Author: Nils 'Jon' Görs

WatchStack A program that monitors the stack of any selected task or process 50 (PAL)/60 (NTSC) times per second and reports the allocated stack, maximum stack usage and current stack used. This program is a clone to StackWatch, disk 494, but improved a little bit. Requires AmigaOS 2.0. Version 2.02, binary only. Author: Brian Ipsen

Fred Fish Disk 819

JukeBox A program to play compact digitial audio discs by emulating a graphical user interface similar to common CD players. It provides a command line oriented, fully programmable ARexx user interface, as well. Version 1.2522, shareware, binary only. Author: Franz-Josef Reichert

MemoMaster A program that warns you about events (like birthdays and anniversaries) as they approach. Version 2, includes source. Author: Jeff Flynn

OctaMEDPlayerStandalone player program for playing songs made with OctaMED. Can load sng+samples-format and MMD0/MMD1-modules made with MED V2.10 or later, or any version of OctaMED. Can play standard four channel Amiga songs, MIDI songs, 5 to 8 channel OctaMED songs, and multi-modules. Has a nice 2.0 look and works fine under 2.0 as well as 1.3. Version 4.04, an update to version 3.00 on disk 688. Binary only. Author: Teijo Kinnunen and AMIGANUTS UNITED

Fred Fish Disk 820

Databench Databench is a new low-cost Database with some nice features like fast search, filter, password, import/export and more. Includes both English and German versions. Demo version only, binary only. Author: Eric Hambuch / APC&TCP Vertrieb

QuickFile A flexible, fast and easy to use flat file database using random access with intelligent buffering to minimise disk access, multiple indexes for fast access to records, form and list style screens and reports, and fast sorting and searching. Files are quickly and easily defined, and fields can be added, changed, or deleted at any time. Version 1.2, shareware, binary only Author: Alan Wigginton

SysInfo A program which reports interesting information about the configuration of your machine, including some speed comparisons with other configurations, versions of the OS software, etc. Lots of new enhancements including information on devices, resources and ports, and graphical speed comparisons. This is version 3.11, an update to version 3.01 on disk 758. Binary only. Author: Nic Wilson

VirusZ A virus detector that recognizes over 500 bootblocks (200 boot viruses) and over 95 file viruses. The filechecker can also decrunch files for testing. The memory checker removes all known viruses from memory without 'Guru Meditation' and checks memory for viruses regularly. VirusZ has easy to use intuitionized menus including keycuts for both beginners and experienced users. VirusZ performs a self-test on every startup to prevent link virus infection. Written entirely in assembly language and operates with Kickstart 1.2/1.3, OS 2.0 and OS 3.0. Version 3.00, an update to version 2.27 on disk 786. Shareware, binary only. Author: Georg Hörmann

Fred Fish Disk 821

Diff Port of GNU Diff, containing "cmp", "diff", "diff3", and "sdiff". Provides all the features of BSD's diff plus options to diff non-ASCII files, to ignore changes that just insert or delete blank lines, to

specify the amount of context for context diffs, plus more. Version 2.1, an update to version 1.10 on disk 281. Includes source. Author: Mike Haertel, et. al. Amiga port by Carsten Steger

Indent A C source code formatter/indenter. Especially useful for cleaning up inconsistently indented code. Version 1.7, an update to version 1.4 on disk 702. Includes source. Author: Various, Amiga port by Carsten Steger

Fred Fish Disk 822

NetHack A screen oriented fantasy game where your goal is to grab as much treasure as you can, retrieve the Amulet of Yendor, and escape the Mazes of Menace alive. On the screen is a map of where you have been and what you have seen on the current dungeon level. As you explore more of the level, it appears on the screen in front of you. Nethack generates a new dungeon every time it is played, thus even veteran players will continue to find it entertaining and exciting. This is part 1 of a 3 part distribution. Part 1 contains the binary portion of the distribution. Part 2 and part 3 contains the source portion of the distribution, and can be found on disk 823 and 824. This is version 3.1pl0, an update to version 3.0pl10 on disk 460. Includes source. Author: Various; see documentation

Fred Fish Disk 823

NetHack A screen oriented fantasy game where your goal is to grab as much treasure as you can, retrieve the Amulet of Yendor, and escape the Mazes of Menace alive. On the screen is a map of where you have been and what you have seen on the current dungeon level. As you explore more of the level, it appears on the screen in front of you. Nethack generates a new dungeon every time it is played, thus even veteran players will continue to find it entertaining and exciting. This is part 2 of a 3 part distribution. Part 1 contains the binary portion of the distribution and can be found on disk 822. Part 2 contains part of the source and part 3 (on disk 824) contains the remainder of the source. This is version 3.1pl0, an update to version 3.0pl10 on disk 460. Includes source. Author: Various; see documentation

Fred Fish Disk 824

AlphMan A programmer tool which may help you to create an intuition or gadtools user interface. It opens a window with a gadget for each keyboard key. If you press a key the dependent gadget will be disabled. So you may check whether a key has been used or not. Requires AmigaDOS 2.04 or higher. Version 1.00, freeware, binary only. Author: Hans-Peter Guenther

GadgetTest A programming example of how to create and handle all of the types of the new AmigaDOS 2.04 gadgets. Requires AmigaDOS 2.04 or higher. This is version 0.01, includes source. Author: Hans-Peter Guenther

NetHack A screen oriented fantasy game where your goal is to grab as much treasure as you can, retrieve the Amulet of Yendor, and escape the Mazes of Menace alive. On the screen is a map of where you have been and what you have seen on the current dungeon level. As you explore more of the level, it appears on the screen in front of you. Nethack generates a new dungeon every time it is played, thus even veteran players will continue to find it entertaining and exciting. This is part 3 of a 3 part distribution. Part 1 contains the binary portion of the distribution and can be found on disk 822. Part 2 contains part of the source and can be found on disk 823. Part 3 contains the remainder of the source. This is version 3.1pl0, an update to version 3.0pl10 on disk 460. Includes source. Author: Various; see documentation

Pager A program to number lines and pages for various kinds of text. It uses printf style formattings and has a lot of cli options, including lines per page, multiple sources, quiet option etc. Requires AmigaDOS 2.04 or higher. This is version 1.00, freeware, binary only. Author: Hans-Peter Guenther

Fred Fish Disk 825

All The Archiving Intuition Interface makes things easier if you are archiving or dearchiving files. You can do it all with the click of a mouse button, instead of typing in a whole line in the CLI. Version 1.35, an update to version 1.03 on disk 799. Now supports KickStart 2.xx as well as 1.3. Supports several archiving formats including LHa, Zoo, Arc, UnArj, and UnZip. Requires reqtools.library. Shareware, binary only. Author: Paul Mclachlan

ASokoban An implementation of the UNIX game Sokoban for the Amiga. Has the original 85 levels of the UNIX game, a nice Intuition GUI, undo and backup functions, and is fully multitasking. Requires Kickstart 2.0. Version 1.1, binary only. Author: Panagiotis Christias

VirusChecker A virus checker that can check memory, disk bootblocks, and all disk files for signs of most known viruses. Can remember nonstandard bootblocks that you indicate are OK and not bother you about them again. Includes an ARexx port. Version 6.22, an update to version 6.06 on disk 680. Binary only. Author: John Veldthuis

WComm A commodity which enables the user to manipulate windows with 43 user definable hotkey commands. You can move, size, resize, set to prefs, zoom, exclude, include, close tile cascading and kill windows. You can cycle screens. WComm also has a title clock, a palette window (with up to 256 colours), a popup shell, and a notify system, which can inform you about any important event and date, such as the birthdays of your friends, etc. You may also automatically start any command, a backup for example, at specific intervals. WComm is controlled by some configuration files and can be handled by the use of the several asynchronous windows. Requires AmigaDOS 2.04 or higher. This is version 1.80, freeware, binary only. Author: Hans-Peter Guenther

Fred Fish Disk 826

Asteriods A very nicely done asteriods game. All images and sounds are loaded from disk as IFF files, and can be replaced by the user if desired. This demo version has been partially disabled to keep the player from going past level 5. Version 0.85, shareware, binary only. Author: Mike Seifert

Date2Day A simple program that gives the day name for the date selected by three gadgets. Uses GadTools library, so requires AmigaDOS 2.04 or higher. Version 0.1, binary only. Author: Gérard Cornu

DMEFReq A tool to replace the arp filerequester calls of dme or other editors with the asl one. It saves the selections to some env variables which can be easily examined from rexx or batch scripts. Includes examples of how to use it in DMe. Requires AmigaDOS 2.04 or higher. Version 1.00, freeware, binary only. Author: Hans-Peter Guenther

MemSnap A small memory monitor useful for seeing how much memory other programs take up. Based on a program called Memeter, which broke under Kickstart 2.0. Requires Kickstart 2.0 or higher. Version 1.1, an update to version 1.0 on disk 696. Includes source. Author: Martin W. Scott

SoftLock A program to help prevent unauthorized access of your bootable hard drive by requiring a password each time you reboot. Has been tested under both AmigaDOS 1.3 and 2.04. This is version 1.0.2, an update to version 1.0.1 on disk 633. Shareware, binary only. Author: Allan Baer

Fred Fish Disk 827

AMaster An address database program with sort, search and selections after each field. The number of entries depends only on the free memory. Has a lot of print options including a print to screen function. Has a full online help system. Includes both German and English versions. Is font independent and has been tested under 2.04 and 3.0. Requires AmigaDOS 2.04 or higher. This is version 1.52, freeware, binary only. Author: Hans-Peter Guenther

AskReqThis is another batchfile requester. It displays a message and prompts the user for a string or optionally for a number. It may be also used to request a choice between the specified gadgets. Has a lot of CLI options. Requires AmigaDOS 2.04 or higher. This is version 1.00, freeware, binary only. Author: Hans-Peter Guenther

AskVersion This little program can be used to check whether you are running under AmigaDOS 1.3 or AmigaDOS 2.04. You can put it into your startup-sequence to execute a 1.3 bootup script. This is version 0.01, public domain, includes source. Author: Hans-Peter Guenther

AztecErr A Manx quickfix support program. If you use the quickfix option of AztecC version 5.xx, you can set CCEDIT to this program. It opens a window which displays all errors one after another. It also has an ARexx port and a gadtools user interface. This is version 1.25 an update to version 1.0 on disk 761. Removed some enforcer hits and is now font independent. Requires AmigaDOS 2.04 or higher. Freeware, binary only. Author: Hans-Peter Guenther

CloseWD A tool which enables you to kill windows which are left on any screen from other programs, which have been terminated by gurus or other things. You can specify the window by pattern matching in the string gadget or by setting a timeout that gives you time to select the proper window. It has a gadtools interface and an "ask-before-closing" option. This is version 2.11 an update to version 1.2 on disk 742. Removed some enforcer hits and is now font independent. Requires AmigaDOS 2.04 or higher. Freeware, binary only. Author: Hans-Peter Guenther

FRequest FRequest is a handy program which lets you select a file by using the ASL file requester and executes a CLI command with the given selection. FRequest can be easily used in batch files and has a lot of options. You can use it as an frontend for any program which does not directly support filerequester selections. It exchanges '[]' in the specified command line with the selection. It has a debug ability for testing of options before execution. This is version 1.55, an update to version 1.5 on disk 743. It now supports multiple file selections and the save filerequester option. Requires AmigaDOS 2.04 or higher. Freeware, binary only. Author: Hans-Peter Guenther

PickFile A random generated executor. It uses a file, or optionally a directory, to start the given commandline which the selection. Can be easily used for slideshows, wbpattern, font, wbpicture changes. Any []'s will be exchanged with the selection. Includes examples. Requires AmigaDOS 2.04 or higher. This is version 1.00, freeware, binary only. Author: Hans-Peter Guenther

Fred Fish Disk 828

DiskTest A utility to test the integrity of floppy and hard disks, ala Norton Utilities. This is version 2.03, an update to version 1.18 on disk 663. New features include a completely revised GUI, implemented with a text scroller. Requires AmigaDOS 2.04 or later. Public domain, includes source. Author: Maurizio Loreti

Post An excellent PostScript interpreter for the Amiga which implements the full Adobe language. Supports type 1 and type 3 fonts, screen output, file output, and printer output. This is version 1.86enh, an update to version 1.7 on disk 669. In this enhanced version all AmigaDOS 1.3 compatibility has been removed to facilitate a better, more consistent user interface using GadTools menus and GadTools gadgets, full support for and use of ASL file requesters has been added, many bugs have been fixed, and the source has been upgraded to work with SAS C 6.x. Requires AmigaDOS 2.04 or later. Includes source. Author: Adrian Aylward, enhancements by Robert Poole

PSFonts Postscript font files from the GNU Ghostscript 2.5.2 distribution, for use with the "Post" postscript interpreter on disk 828. This is part one of a three part distribution. Parts two and three can be found on disks 829 and 830 respectively. Author: Various, see docs.

Fred Fish Disk 829

PSFonts Postscript font files from the GNU Ghostscript 2.5.2 distribution, for use with the "Post" postscript interpreter on disk 828. This is part two of a three part distribution. Parts one and three can be found on disks 828 and 830 respectively. Author: Various, see docs.

Fred Fish Disk 830

PSFonts Postscript font files from the GNU Ghostscript 2.5.2 distribution, for use with the "Post" postscript interpreter on disk 828. This is part three of a three part distribution. Parts one and two can be found on disks 828 and 829 respectively. Author: Various, see docs.

To Be Continued.....

In Conclusion

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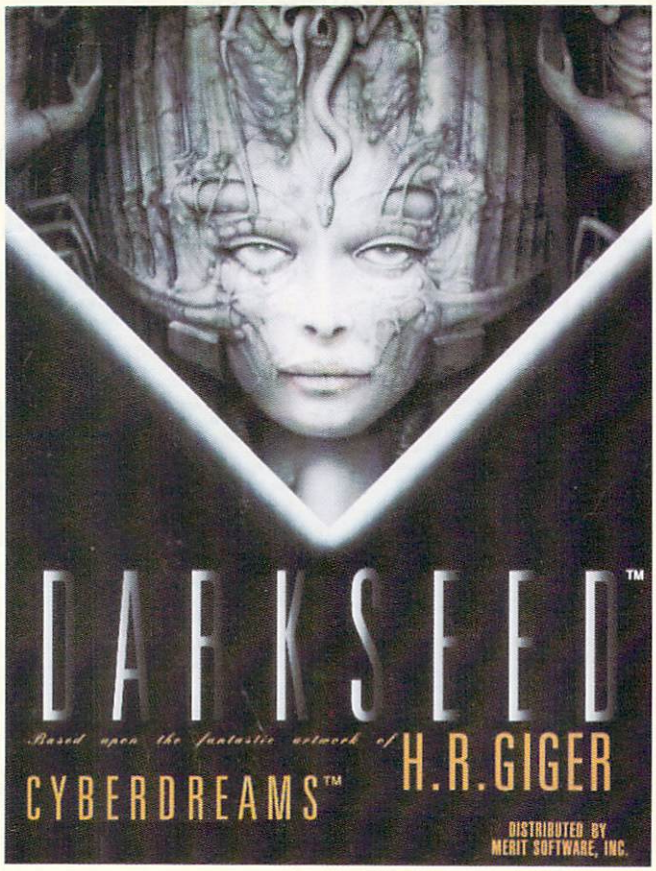
Darkseed

featuring the artwork of H.R. Geiger

by Rob Hayes

If you've seen any of the Alien movies, you're familiar with the artwork of H. R. Giger. His unique blending of biological and mechanical elements added a special ingredient to the alien creatures. His talent has added that same something extra to *Darkseed*, from Cyberdreams.

The character you play in this graphic adventure is Mike Dawson, a science fiction writer who has bought an old house where he can write. Unfortunately, the previous owner didn't warn you about the nightmares that come every time you go to sleep, or the strange things the postman brings. As you explore your new house and town, clues allow you to find the portal and cross over to the Dark World. The ultimate goal is to save the Earth from the things in the Dark World.



Darkseed is an exquisite piece of work. Giger's artwork was digitized, then cleaned up and sized using *DPaint*. Real people were videotaped, then digitized to produce the animated actions you control in the game. The backgrounds in the 75 locations are almost never static, lights flicker, and things move. The sometimes eerie music complements the digitized sound effects, which range from creaking stairs and the ticking of a clock, to the voices of characters talking with Mike.

It's the extra touches that enhance the enjoyability of the game, like the dog that can't simply walk past the fire hydrant, or the birds and squirrels in the woods. Humor lurks even in the cemetery. Be sure to read the inscriptions on the headstones.

The game is controlled entirely with the mouse, whose pointer changes from an arrow, to a hand, to a question mark when you click the right button. Each of these will also change as you move the pointer across some object in the scene that is important. The hand changes to a pointing finger if you cross any object that can be manipulated. The question mark changes to an exclamation mark to show importance, and the arrow will change anytime you move it over any sort of exit from the room. This removes some of the seemingly endless attempted manipulation of objects found in some other games of this type. Since you have a very limited amount of game time in which to solve all of the puzzles, anything that helps to move the game along is welcomed. On the other hand, it also removes some of the mystery of exploring new worlds.

Darkseed is a huge game, supplied on seven floppy disks, and requiring at least 6.5MB of available space if you want to play from a hard disk. Playing from floppy isn't quite the task it may seem because the game will use external drives if you have them. Copy protection is provided by the slim background manual, and a four-page Amiga supplement is also included. Games can be paused at any time, and up to 50 different saved locations are allowed. Darkseed requires Kickstart 1.2 or higher, and a minimum of 1MB of memory. Although it doesn't multitask, you are returned to the Workbench when you quit the game.

Included in the review package was the optional ($9.95) hint book. This is organized to provide background information on the characters, then a hint for a specific problem, and then a detailed solution to that problem—presented in mirror type to prevent wandering eyes from spoiling the fun. It also includes maps and a detailed walk-through for those hopelessly lost.

If you are new to adventuring, this is an excellent choice, with puzzles that are challenging without being impossible. As good as the artwork is, I hope Cyberdreams will update it to support the new AGA chipset. Darkseed would be stunning in 256 colors.

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Artwork by Jim Sachs. Created at 640x480 in 256 colors on an Amiga 4000.

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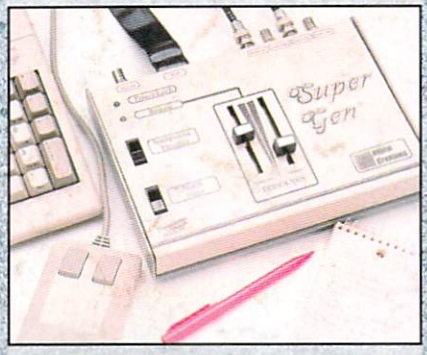
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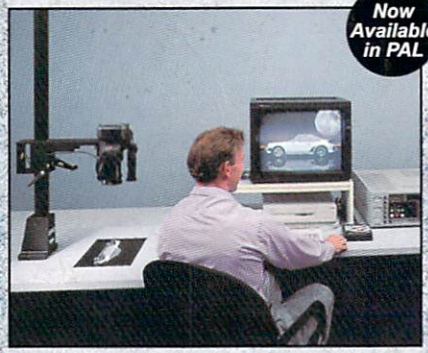


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